THE NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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EFFECTS OF FROST.

The keen, clear air—the splendid sight—
We waken to a world of ice,
Where all things are enshrined in light,
As by some genii's quaint device.

A shower of gems is strewed around,
The flowers of winter rich and rare,
Rubies and sapphires deck the ground,
The topaz, emerald, all are there.—*A. Norton.*

"Blow, blow, ye winds with heavier gust!
And freeze, thou bitter, biting frost!"—*Burns.*

DECEMBER closes the year. It is now winter. The sun rises late and sets early. The trees have shed their leaves, and look like mere skeletons of their former selves, Birds and insects have migrated or hid themselves in the earth. We sometimes call it a gloomy season, and feel that nature is dead. But why so? "A thousand secret operations are in progress by which the seeds, buds, and roots of future plants and flowers are not only preserved but elaborated that when the prolific months of Spring arrive, they may burst into life in all the freshness and vigor of a new birth." The frost which binds the stream loosens the soil, and by disintegrating the rocks adds to its productive power. The old English adage that

"December's frost and January's flood,
Never boded the Husbandman good,"

is far from being correct. The frozen clods crumble down in the spring so minutely divided as materially to lesson the labor of the husbandman in preparing the soil for seed. We might enlarge upon the beneficial effects of frost during winter, but at present will confine our remarks to some of its operations earlier in the season.

The effect of frost upon vegetables depends upon circumstances. If they thraw gradually without exposure to the light, they receive but little apparent injury. Scions, and cuttings of trees, bushes and vines, may be buried a few inches in the ground, and remain all winter without injury. Of course they freeze as hard as the ground with which they are covered. But they thaw gradually and in the dark. Potatoes left in the ground often vegetate the next season. The roots of grass, grain and trees, are frozen solid during the winter. If they were on the surface of the earth and thawed in the light they would be killed, but being thawed gradually and in the absence of light they retain their vitality. Apples are often frozen in the cellar, and thaw without apparent injury.

The effects of early frosts in the Autumn

upon vegetation, varies greatly at different times. Sometimes a slight frost destroys all vegetable life, while another year, a frost in which the temperature is considerably lower, appears to do but little injury. There was a smart frost the present season, September 28, which we supposed would effectually destroy all the vines, but much to our surprise the tomatoes and beans and grape vines continued fresh and green, and we frequently heard the remark, How little injury the frost has done! There could be no mistake about the severity of the cold. There was not only frost, but a freeze. We actually saw ice made on the surface of water standing by the house.

Thinking of the subject, it occurred to us that the frozen articles had thawed under cover, with a partial exclusion of the light. A heavy damp cloud hung over the surface of the earth like a thick blanket, and shut off the rays of the sun, and continued till sometime in the afternoon. The morning was cold and chilly, and the thrawing took place gradually, and under just that combination of circumstances that would be most likely to prevent injury from the frost. If the sun had shone out bright and clear the next morning, the bean and tomato leaves would have turned black, the corn leaves white, and the injury would have been much greater than it proved. A change of wind that condensed the vapor and suspended it near the surface of the earth, saved the plants.

Light especially when imparted by the direct rays of the sun, is an agent of great power, and although we have lived in it all our days and bathed in an ocean of light, how little do we know of its properties and powers. It is the great organizer by which nature builds up all her living organizations, and it is also a disorganizer, by which organisms are reduced to their elements, to be again used as materials for building up other organisms. It is one of the forces of nature, and the more we understand the laws by which it is governed, the better shall we be able to subject it to our service.

ABORTION IN COWS.

A searching investigation with regard to the cause of abortion in cows has been carried on during the past season by a Commission appointed by the New York State Agricultural Society. They have examined the vegetable growths on a great number of farms, especially with reference to ergot and the plants on which it is found. It is to be hoped that something definite will result from this careful investigation, The veterinary editor of the *North British Agriculturist* says stagnant or foul water is injurious to all animals. It causes blood poisoning and thus leads to many febrile complaints. It brings on abortion in other animals as well as cows. Two winters ago three fine mares belonging to a somewhat careless and untidy farmer slipped their colts shortly after Christmas. The mares had been tolerably well kept, and not too hardly worked, but had been watered for several weeks at a pool, by the side of which a large manure heap had been foolishly placed, and into which the highly colored organic matters freely found their way. Some ewes watered at the same pool cast their lambs, while another lot of ewes kept two fields distant, managed exactly in the same way but enjoying a purer supply of water, carried their lambs to the full period. Since better care has been taken to prevent the water supply from being contaminated by the manure heap, neither mares nor ewes have suffered abortion.

INFLUENCE OF THE MOON.

Young plants, like human babies, must have plenty of rest. If they shoot up from the seed in the waning of the moon, they enjoy the repose of the long, dark nights; if in the growing moon, their young life, over-stimulated by the light, perishes or suffers deterioration more or less.

The latest observations make it certain that the sun-heat reflected from the full moon's face is sufficient to dispel clouds, and it must modify therefore, notably, the climate of the kitchen garden.

One of the most brilliant astronomical discoveries of the last ten years is that of the so-called eleven-year cycle, during which Jupiter and the other planets alternately collect upon one side of the sun, and then at other times disperse themselves around it, producing in the one case an abundant supply of spots upon the sun's disc, with a corresponding lowering of the climate of the earth, and in the other, the dispersion and disappearance of spots, and a higher mean temperature of the earth. —*Lesley's Lectures.*

—It has been said that migatory birds prepare for long journeys by purgation brought on by eating the seed of a weed common on its feeding ground.

NON-BEARING APPLE TREES—PRUNING.

A Letter from a correspondent at Taunton, "W. H. R.," makes several inquiries in regard to the management of apple trees, which seem to require more space than is usually devoted to notices under our head of "Extracts and Replies." We give it, therefore, a position somewhat more conspicuous.

Our correspondent desires to be informed in the first place, "how to make apple trees bear that are standing in grass ground, and that have not been manured for several years."

To this query we reply, that we consider it the most effectual, and the cheapest way in the end, to plough the whole surface this fall, if practicable, manure with compost or fresh manure, and harrow it thoroughly in. Plough carefully, so as not to wound the stems of the trees, and five or six inches deep. If the soil below six inches is ordinarily light, the roots will mostly be under that and will receive but little harm from the plough. If a few small roots are disturbed the damage will be quite trifling. This course will not only enrich the whole soil, but will render it light and porous, and suitable for the roots of the trees to extend themselves and find nourishment in it.

Top dressing will not answer; its effect will be to enrich the surface, stimulate the net-work of grass roots that lie near the top of the ground, cover it with an accumulated growth, and thus rob the trees of the nutriment which you are aiming to supply them with.

It will be best to cultivate the orchard with some hoed crop for a year or two, and manure moderately each season. In this way the soil will soon become light, the atmosphere will have a decided influence upon it, and a paying crop may be the result for several years, and the trees receive much benefit at the same time. These crops may be barley, potatoes, or mangolds. The ground may then be stocked with grass, and a ton to the acre cut for five or six years without special detriment to the trees. They will have an average growth in the extension of their branches of about eight inches annually, and their foliage will be vigorous and of a dark green color. If apple trees do not bear under such treatment—and sometimes they will not—the cause of such barrenness, and the remedy for it, are alike unknown to us. On very rich land, trees occasionally make so much wood that they do not fruit; cropping the land with potatoes or grain has a tendency to check the growth of wood, and induce the trees to bear fruit.

We have very little faith in the efficacy of digging up the earth about fruit trees in a circle whose diameter is only six or eight feet. It is probably better than no digging, but is not, we think, an economical operation.

Our correspondent continues as follows:—

"I have one apple tree that bears one-half one year and the other half the next. I should like to know if it cannot be made to bear every year?"

There are no means in our knowledge of making a "tree bear all over every year," excepting a generous soil and a judicious management of the tree in every respect. It is rarely the case that an apple tree does bear every year. A fair crop of apples exhausts the tree and the soil in a considerable degree, so that both soil and tree must have rest and time to recuperate their exhausted powers. If a tree bears a moderate crop *every year*, whether it be on one-half or the whole tree, it seems to us that it would be about as much as we can reasonably expect. He continues:—

"I would also like it if you would give some directions about trimming, as to time, and about how a tree ought to be trimmed."

We are glad to find that an interest is still felt in the apple crop, although it has been so sadly deficient for several years past. It may flourish again, and afford us a large surplus for foreign markets. Wholesome, nutritious and palatable as the apple is, thousands of families among us have undoubtedly been without it,—unless in the most limited quantity,—for four or five years past. During this period, less attention has been paid to the setting new orchards; those of middle age have been greatly neglected, and old trees have been cut down by hundreds and given to the flames.

Another and prime cause of rapid decay and loss has been occasioned by thoughtless, careless and injudicious pruning. Few of the duties of the farm are so badly performed—bad

in the *manner* in which it is done, and in the *season* usually selected for the operation. Trees are living things, and must be treated as such. Their young bark is as vulnerable to hob-nail boots as the back of the hand, and as easily mutilated by a dull saw or knife. No skilful surgeon would amputate a limb with dull instruments, or leave the bleeding wound exposed to the air; but many farmers who have pruned for forty years, and think they "know a thing or two about it," do both.

Every wound made in pruning that is half an inch across should be covered. If the tree is vigorous it will probably grow over without help, but covering greatly aids the effort of the tree in healing up any damage done to its outer garment. The best covering is gum shellac dissolved in alcohol; but as alcohol is quite expensive at present, paint of any color will answer the purpose, if care is used not to let it get upon the bark.

There is need of but very little pruning where an orchard has been properly managed from the start; no large limbs will ever need to be taken away, unless broken by winds or injured in some other way. *Prune but little*, is a good motto, but prune *annually*. Do not allow suckers or limbs that are crossing each other to grow several years before they are removed. Suffer the shoots that start out in spring to remain until the leaves have fallen in autumn and then cut them smoothly off. The tree needs them for a time, and Nature, ever ready with a helping hand, sends them out to aid the leaves of the top in elaborating the sap and increasing the whole growth of the tree.

As to the best time for pruning apple trees we have not a particle of doubt. From a long series of personal experiments running through twenty years, from reliable books recording the experience of others, conversations with practical men and an extensive examination of orchards, we are fully of the opinion that the *middle of the month of June* is the most appropriate time. But as the ground is covered with grass or other crops at that season, and hoeing and other work is pressing, it is not always convenient to engage in it then. The next best time is in *October, after the trees have shed their leaves;* and this may be extended into November or December, if the operator can keep himself sufficiently warm to do the work well.

Where we have carefully pruned at either of these times it has seldom been followed by a flowing of the sap, and the black discoloration of the bark which so often follows spring pruning. The wounds become dry and hard on the surface, a lively growth commences in a few weeks if the pruning is done in June, and early in the following spring if the work is done in the fall, and the tree seems to sustain no check or injury whatever.

The question may be asked. *Why* is it best to prune at the seasons mentioned? We answer, because the tree is then *in a comparative state of rest.* The sap has ascended through the sap vessels in the trunk, followed out the extremity of the smallest twigs, and into the leaves, there to be worked over by the wonderful alchemy of Nature into a thicker and more substantial substance. This thickened, or inspissated sap, as it is called, then passes down directly under the bark, and gives the trunk and branches their annual growth in diameter. Now, then, when the tubes or sap vessels are nearly empty, or are comparatively so, is the time to prune. This occurs, for about fifteen days in midsummer, and after the trees have cast their leaves in autumn, until a succession of sunny and warm days sets the sap in motion again. Such days occur sometime in mid-winter, and it would then be unfavorable for pruning.

In pruning in June or October the saw soon becomes so much covered with gum that it is moved with difficulty, and it becomes necessary to wash it. This has never occurred in March, April, or May, in our experience. The sap is then thin and abundant, and the saw remains clean and bright.

In pruning the aim should be to keep the head of the tree open to the air and light, and free from limbs that are crossing and rubbing against each other. Cut out these and the occasional dead limbs which may be found and the orchard which has been well managed will need little more in the way of *pruning*. Each tree should be examined annually, and whatever is needed for it, done.

—Alexander Hyde, of Lee, has been invited to deliver a course of twelve lectures on agriculture, this winter, before the Lowell Institute at Boston. This gentleman delivered an able address before the Hoosac Valley Agricultural Society at their fall meeting.

For the New England Farmer.

THE GARDEN IN DECEMBER.

Our New England climate will preclude much actual labor in the out door garden in December, unless we have cold frames in which we have plants that are being wintered over. These will need looking to, occasionally, to see that all is right. Give air in the middle of pleasant days, and see that they are properly protected during extreme cold days and nights. Prepare hot-bed frames, sash &c.; paint and reglaze old sash, and if you have none make new and have them ready against spring opens.

Look to the fruit and ornamental trees, and see that the mice do not get at them to their injury, cut and clear away all grass, or weeds from around them, so they will have no shelter to harbor in; see the trees do not get overloaded with snow or ice; shake off the snow, gently, from fir and other evergreen trees in the lawn, yard, &c. Look over, and see that the seeds are all well dried, correctly labelled, and stored away safely in paper bags, boxes, &c., and that no vermin infest them; make a memorandum of seeds wanted ready to order early.

The past season we had, by a few nights slight protection, good ripe tomatoes from our garden as late as the middle of October, and green corn good for boiling as late, although the frost had singed the blades of the stalks. For the first planting we had the Mexican sweet corn, which is good enough for any one; this we planted early in May, and had boiling ears in good season in July; this kind has a small kernel and medium sized ear, but very sweet and good. I then planted Trimbles the 22d of June and began picking it early in August, and in October there were good boiling ears; this is a larger eared, and kernel variety, than the Mexican, about the size of the Evergreen; it is an excellent variety for the garden. I have relied on the Evergreen, mainly, heretofore, which is a larger and later variety and very good, lasting a long time in cooking and eating condition; but I prefer, for my own eating, either the Mexican or Trimbles, as grown the past season; I think they are hard to be beat.

Our pole beans, this season run too much to vines, although they bore a fair amount of fruit. I think we planted them too thick, although the poles were stuck three feet apart, or over; beans, squash, cucumbers, and tomatoes grew largely to vines in our garden. Summer crook-neck squash, I have failed to grow good for several years past till this year, when we had nice ones; heretofore they have turned to hard shell pumpkins-like things, although seed was procured from different sources. We also had nicer Citron Watermelons than for some years; these we shall preserve, using a little green ginger root, lemon, &c. They may be preserved and dried, and make a substitute for expensive dried citron. Strawberries we had many more of than I expected when in blossom, there being so much rain at the time; grapes were hardly dealt with by the cold of the last winter, killing and injuring the vines; although I had two Concords that were not laid down which bore quite full. My Hartford started only from dormant buds. Currants did not do as well as last year; the bunches want taking up and dividing, using only the young shoots and setting in new ground, deeply worked and well enriched. I have yet to learn that the "currant worm" has appeared in this vicinity—*long* may he be in coming. W. H. WHITE.

South Windsor, Conn. 1868.

For the New England Farmer.

BRAINS IN FARMING---No. 1.

Not long since, in passing across the meadow of a young Vermont farmer, where old stumps, pieces of rails, sticks, brush, &c. were lying scattered about promiscuously, rendering the use of the mower and horse-rake an utter impossibility. I asked him the following question: "Did you know that *brains* were a capital article to use on a farm?" His reply was,—"Brains! what's that?" To present this case as indicative of the average intelligence of Vermont farmers, would not be, perhaps, exactly fair; and yet, judging from careful observation, one can hardly avoid the conclusion that there is more than *one* farmer among us who does not know *brains*, much less use them in his farming operations. I hardly know how to account for this glaring fact.

It is not that Vermont farmers, as a class, are destitute of brains. But the trouble is, most of them ignore brains altogether, and depend on muscle alone. There are instances, however, I am happy to say, and they are multiplying gradually from year to year, which go to show that when brain-power and muscle-power come into competition in the management of the farm, brains are sure to win. Not that muscle can be dispensed with, but brains render muscle more effective and productive.

There are instances in our State where professional men, such as lawyers, physicians, and even clergymen have been, and are, the most successful cultivators of the soil among us. Does any one wish to know the secret of their success? It is simply this: they put *brains* into the business. Their employees supply the muscle and they themselves furnish the brains and make every blow tell, if not in paying crops, yet in the permanent improvement of their farms.

I have never known an instance where a merchant, or a mechanic turned his attention to agriculture and failed of success. What is the secret of this? It lies in the simple fact that they carry the brain culture, and business habits acquired in mercantile or mechanical pursuits into their farming operations. If they raise a colt, or a yoke of oxen, or a

crop of grain they know what it cost them, and whether it pays or not. If it does *not* pay, they put in a little more brains, and "try, try again" until they do make it pay.

I have an instance now in my mind of a young man who left mercantile business in one of our large cities and came back to the old homestead to take care of father and mother in their declining years. The farm was located in an out-of-the-way place, hard and stony, very little of the land capable of cultivation, but an excellent grass farm.

He went into the stock-raising and dairy business and was successful; while those around him with much better farms, relying on muscle alone made very little head-way.

The waste of muscular power in our State, for the lack of brains or neglect to use them aright is enormous. Were this vast power rightly directed it would make our green hills and beautiful valleys "bud and blossom like a rose."

I have, Mr. Editor, unbounded faith in *brains*,—especially in their application to agricultural operations.

In my next article I propose to bring out some facts which indicate that if our Vermont farmers have brains, comparatively few know how to use them. UNCLE JOHN.

Charlotte, Vt., Oct. 28, 1868.

REMARKS.—On introducing "Uncle John" as a new correspondent of the FARMER, we may be permitted to remark that however assiduously he may have cultivated "brains" his beautiful chirography shows conclusively that he has by no means neglected the training of "muscle."

For the New England Farmer.

ROVING HABITS OF COARSE AND FINE WOOL SHEEP.

In your issue of Oct. 24th, I noticed a communication from T. L. Hart on "Fine and Coarse Wooled Sheep," in which he assumes that with him coarse wooled sheep have paid a "good per cent. on cost" while the fine wooled were unprofitable.

Without assuming to argue this point I propose to say a word in answer to your inquiry, under the head of "Remarks," as to the roving habits of the coarse wools, as charged by the fine wool breeders.

I cannot write from actual experience as it regards coarse wooled, but as to fine wooled I can. I was raised on a farm that paid some attention to sheep-breeding. We had a flock of some twenty-five to forty, and I have to say that *no* fence or wall would or could enclose them, even though the feed inside was better than elsewhere. Their habits were such that we could only find them by hampering, and even then they would scale the wall. They became a perfect nuisance and the result was, all were sold at a sacrifice, though for more than they were worth, considering the great trouble to take care of and keep them at home. Other farmers in the same neighborhood were troubled as we were. I do not believe it possible for any coarse wooled sheep to be of a more roving habit than these fine wools were.

I have called the attention of prominent wool growers to the subject of the "Remarks" above referred to, and I find that their experience with fine wooled sheep has been the same, some adding "they will go *over* or *through* any fence in New England in which there is so much as a knot-hole."

A gentleman of my acquaintance began several years ago with coarse wools. With only ordinary fences, he has never had the slightest trouble with them, always finding them in the pasture where he put them. He remarked that "they would fill themselves and instead of roving about, would lay quietly down, chew their cud and *grow fat*." He was, however, finally induced to change them for the more fashionable fine wools, and for three years was on the trot after his sheep. He became so much dissatisfied that he changed back to coarse wools and has now a fine flock, which give him no trouble whatever, so far as roving is concerned. I have not as yet seen a coarse wooled sheep hampered on any farm, and from the best evidence I can get they are far more peaceable than fine, under all circumstances.

Many farmers in Maine in possession of the fine wooled sheep are offering them at a reduced price, and no buyers. I know of one who offers his whole flock at $1.50 per head, and is paying $3.50 and $4.00 for coarse wooled sheep. Others are paying $5 and $6 for coarse, after having sacrificed on their fine sheep. Coarse wooled breeders are anxious to have this question discussed as they are positive the verdict will be in their favor.

Wilton, Me., Nov. 2, 1868. ZEN.

For the New England Farmer.

LONG-WOOLED SHEEP.

The question is frequently asked, which of the different breeds of the long-wooled sheep is the most profitable? And it is a question which is very difficult to answer. Some prefer one, some another; but the choice ought to be directed to the characteristics which we desire. There is but little difference in the weight of fleece or character between the Leicester, the Cotswold, Lincoln or Teeswaters, and but little difference in the weight of carcass.

The *Leicesters* mature the earliest, but are the most tender, and the least prolific; the latter, perhaps, after all, not so much of a fault; for too many lambs are not always the most profitable; but the Leicesters are bad nurses, as a general thing, and lay on their

fat almost entirely just under the skin, so that the fat lays on the outside of the meat. This would not be so palatable to the American taste, nor is the mutton of the Leicester held in the highest estimation in England. The Leicesters are the most showy of any of the long wools; have clean white faces and legs, a round body, and the quarters very evenly balanced; the wethers weighing at two years old from twenty to thirty pounds per quarter, and the ewes at four years old from eighteen to twenty-six.

The *Cotswolds* are a more hardy breed, more prolific and better nurses; the wool may be a trifle coarser, but if a person desires, he can make his wool finer or coarser by selecting his finest buck and ewes for breeding. His fleeces, however, will be a little lighter. The Cotswold is not so symmetrical an animal as the Leicester; its hind quarters being larger than the forequarters, and it has a tendency to accumulate fat on the rump. The wool grows down on the forehead and the chops, and down on the legs. The fat is better distributed through the whole system than on the Leicester.

The *Lincolnshires* are larger framed animals; the staple is longer and fleeces heavier than either the Leicesters or Cotswolds. It measures from ten to eighteen inches in length, and the fleece weighs from eight to fourteen pounds. The sheep is hardy and prolific, but matures slowly and requires a very rich pasture; fourteen pounds of wool cannot be obtained without good feed and plenty of it.

The *Teeswaters* are the most prolific of the long wooled breeds; their wool is not quite so long or their fleece so heavy as the Lincolns; they require good pastures—as good as do the Short-horn cattle. In fact it will not do to turn the long wooled sheep upon poor, rough pastures for the purpose of exterminating bushes; if you do you may expect to exterminate your sheep. They must be well fed, or their wool is worthless, and if allowed to run among the bushes it becomes filled with sticks and seeds and a large portion of their wool is left hanging to the bushes. The Teeswaters, on good pastures, at two years old, will give from twenty-five to thirty-five pounds per quarter, and some at four years old have been fed to fifty-five pounds per quarter.

There are a number of grades from these breeds of which, as a lustre-wooled sheep, the *New Oxfordshire* is at the head; this is a cross between the Leicester and Cotswold.

The *Oxford Down* as a mutton sheep is valuable, but its wool partakes too much of the character of the Southdown. For some purposes it would be valuable; but for a lustre wool it is of no account. It is an excellent breeder, matures early, and produces good lambs, which bring a good price. It would do better on poor pastures than any of the others, but we should advise our farmers to keep these on good pastures. It is very well on paper to talk about subduing wild lands by pasturing with sheep, but such pastures make poor, wild wool and run out the sheep. If you desire good animals you must feed them. MENTOR.

Boston, Oct. 20, 1868.

GLYCERINE.

This article within a few years past has become of great importance in the arts and in medicine. It was formerly supplied to us from England, at a high cost, and often contaminated with rancid oils. It was chiefly obtained from Palm oil. It is now produced from the waste in the manufacture of star candles, from lard, and until within ten years, was entirely lost.

Glycerine is sweet to the taste, and is not subject to oxidation. It has the consistence of oil, but does not congeal. It mixes readily with water, but does not readily evaporate. It is used internally and externally in medicine. It is used to some extent in the place of Cod Liver oil, and is said to be quite as efficacious, and is certainly more palatable. It is used in surgery in the treatment of burns and wounds, and enters into the composition of salves and ointments. It is applied in rheumatism, sore throat, and diseases of the ear, and is a specific for chapped hands and lips, and for sore teats in cows. It is antiseptic, and as a solvent for many substances, is better than alcohol or water.

It is used for filling gas metres, for it does not freeze like water, nor evaporate like alcohol. Perfumers use it largely in the preparation of hair dressings. It keeps the scalp sound and healthy, and the hair soft and smooth.

Tanners make use of it to keep leather soft, and it is the best oil for harnesses, and is the most valuable ingredient in paste blacking. Combined with printers' ink, it keeps the rollers soft and flexible. It is less effected by the atmosphere than almost any other substance.

About 600,000 pounds of it are now manufactured annually at Cincinnati, which is subjected to various degrees of purification, according to the use for which it is wanted.—*C. Cist, in U. S. Ag. Rep.*

—The most extensive farmer in France is M. de Candaine. His farm in Touraine is valued at two million francs, and the income he derives from it is considerably above 500,000 francs a year. He sells every year one thousand head of fat cattle, and has on his farm a distillery, a beet, starch and sugar factory, and a large linen and woolen factory, and all his factories and farm buildings are lighted with gas. His farm is said to be the most productive in Europe.

NEW PUBLICATIONS.

THE TIM BUNKER PAPERS, or Yankee Farming. By Timothy Bunker, Esq., of Hookertown, Conn. With Illustrations, by Hoppin. New York: Orange Judd & Co. 1868. Boston: A. Williams & Co., 100 Washington Street.

This volume is a reprint of a series of articles that originally appeared in a monthly magazine entitled the *American Agriculturist*. As occasional articles in that miscellaneous journal they were sufficiently offensive; as a whole bookful they are more than we can swallow. We are sorry to see the Tim Bunker papers in book form. We regard the volume as a slander on farmers, and an insult to every one engaged in agriculture. The style, the language, the characters and the illustrations are those of ignoramuses and clowns. And yet the writer says these papers "are a humble attempt to represent the average wisdom of the Connecticut farmer," and as we suppose the farmers of Connecticut are as intelligent as those of other States, we conclude he has given us his idea of the average wisdom of the farmers of our country generally. Two examples are all we care to copy to show what that idea really is:—

"Irritation of the land!" exclaimed Kier Frink, as he looked out of his coal cart, where he had stopped to hear what was said by the company. "What does he mean by that? I never heern of that even in the White-oaks, where they irritate almost every thing from cats up to old hosses."

"He is gwine to turn a brook on here and git six tun of hay to the acre," answered Tucker.

"If he can," added Jones.

"And blame him, he'll du it neow, ye see, for he's a master hand to carry his pint," said Seth Twiggs.

"Neow du tell," responded Kier, hitting his horse a smart lick, "Tim Bunker waterin a swamp! git up old hoss, this aint a safe place for yew."—pp. 142-3.

* * * * * * *

"Hain't you got most tired on't, Squire?" asked Ben Jones, as I carted along my twentieth load of muck last night.

"Guess not. Why?" I replied.

"It's a mighty deal of hard work for nothing. I'd just as leeves have so many loads of snow banks in a barn-yard."

"It's all moonshine about there being any vartu in muck. I'd jest as soon dung a field with icicles," chimed in George Washington Tucker, who gets his ideas and his drinks from Jones.

"Them's my sentiments, exactly," said Jake Frink, as he met us in the road with a load of oats in bags, going down to Shadtown to market.—pp. 182-3.

Is this a fair representation of the "average wisdom" or the average intelligence of Yankee farmers? Are they as utterly ignorant of irrigation, of the value of muck, or of the use of language as these extracts indicate? We were born, brought up, and have worked a good part of our lives among farmers,—they are our neighbors, friends and relatives,—and we regard such slang as a calumny on them and on ourselves, alike false and injurious. We ask that this style of "book farming" be abandoned, and that our agricultural teachers shall recognize the common sense, if not the intelligence of farmers. We believe that farmers know more, and learned men less, than they have credit for; and that there is less difference between the "average wisdom" of the workers upon the farm everywhere, and the actual knowledge of scientific men, than is generally supposed. Prof. S. W. Johnson, a thoroughly scientific man, and for many years a teacher of chemistry, &c., in Yale College, recognizes this fact in his new work on "How Crops Grow," by the broad assertion, among many similar recognitions, that "*Every successful farmer is to some extent a scientific man.*"

It is therefore with sincere regret that we acknowledge the receipt from the publishers of such books as Darwin's "Animals and Plants under Domestication," of Johnson's "How Crops Grow," &c., a volume of such twaddle as the "Tim Bunker Papers," and that they should illustrate it by caricatures of farmers more offensive, if possible, than the text itself.

We do not deny—we wish we could—that such vulgarisms as we object to in this volume are used by some farmers; neither can we deny that profanity and obscenity are sometimes heard upon the farm. But we do protest earnestly against their repetition in well-printed books.

SIDE SHOWS AT FAIRS.—"The more we see of these exhibitions," says the Chicago *Prairie Farmer*, and we perfectly agree with the writer, "the more thoroughly we are convinced that they are unmitigated nuisances, every one of them, and ought not to be tolerated, and with this conviction we are determined, if possible, to create a public sentiment that shall neither recognize nor patronize them. It is certainly mistaken policy on the part of our agricultural societies, for a comparatively paltry fee, to permit these travelling humbugs to attend their exhibitions, and reap and carry away, without leaving a consideration, thousands of dollars, which remaining with the people, would contribute to the success of future exhibitions. The sooner this truth is recognized, and side shows at our Fairs numbered with horse-racing and gambling, the better it will be both for the societies and the people."

IRISH MOSS.

Chondrus Crispus---Carrageen Moss.

Quite a business has sprung up within a few years past, in the collection of this article on the eastern coast of Massachusetts, especially at Scituate, in Plymouth Co., in the neighborhood of Minot's Ledge. Some 6000 barrels, it is said, are annually gathered. It was formerly brought to this country from the coast of Ireland; hence its name, Irish moss.

It is collected during the summer months, from May to September. A rake with flat iron teeth, some half hogshead tubs, baskets, a

common hay rake, a suitable boat, and some pieces of canvass constitute the outfit of a mosser.

He commences operation at low tide, when the moss is left bare on the rocks. At spring tide, when the rocks are uncovered to a greater distance from the shore than at neap or common tide, he finds the best article. This he pulls by hand. It is more free from admixture with tape grass, and other marine plants, and he bleaches this with special care. This is bought by the druggists, and is used for blancmange.

At common tides, he gathers it with his rake. As the tide rises he runs his boat on to the beach. The moss is then transported on hand barrows to bleaching beds on the higher parts of the beach, where it is turned with a hay rake until it is dry. Then it is washed in salt water, and again spread and dried, and this process is repeated several times, until it is sufficiently bleached, when it is packed in barrels and headed up and is ready for market.

The mossers watch the heavens as carefully as do the hay-makers, and when a rain threatens, they put it into cocks and cover it with canvass hay caps. The prime article constitutes but a small part of the crop. This, as we have said, is chiefly taken by the apothecaries.

Its most important use is in the manufacture of cloth, paper, felt hats and straw hats, in which it is used for sizing. The poorer qualities are bought for size. The second quality is sold to the brewers, by whom it is used for "fining" beer. A quantity of the moss is boiled with the beer, and its gelatine unites with the impurities, and produces the required clarification. It is also used, instead of isinglass, fish skin, and white of eggs, for fining coffee.

A Large Business.—One firm in Cincinnatti made in a single year, star and tallow candles, soap, lard oil, olive oil, glycerine, &c., exceeding the value of two millions of dollars. They are regularly filling orders from California and elsewhere, of five to ten thousand boxes of soap and star candles, the first of sixty and the second of thirty-five pounds to the box. They use up of resin, thirty-six hundred barrels, of soda ash one thousand tons, of candle wick thirty thousand pounds, of sulphuric acid twenty hundred carboys, of tallow five thousand barrels, and their consumption of lard, on an average, equals weekly seven hundred and fifty tierces of three hundred pounds each, per week, for two hundred and eighty days in the year.

No Trials of Speed at the New York State Fairs.—From a table of the attendance at each of the annual fairs of the New York State Agricultural Society for the past twenty-four years, it appears that the average attendance for each of the first twelve years was 51,000, and for each of the last twelve years 53,500. This latter term includes, of course, the several years of the late war, during which many societies held no exhibition. The attendance this year was 68,400. And yet the *Country Gentleman* informs us "that *never* has a horse trotted against another, or against time, on the Society's grounds."

For the New England Farmer.

CULTIVATION OF CRANBERRIES.

I noticed in a late Farmer an inquiry by a New Hampshire correspondent in reference to cranberry culture. Having had a little experience in the business, sometimes succeeding and sometimes failing, an inquiry of that kind always interests me.

Some ten or twelve years ago I conceived the idea of converting what was formerly the bottom of a reservoir, into something that would be of some sort of income. A portion of it was covered with small willows; another portion with sweet flag; and the rest of it was just getting into grass. The willows and sweet flag I took out, root and branch, which left the mud naked and bare. Into this mud and among the grass I put the vines, in little tufts, about three feet apart each way To get the right kind, I carted them seven miles.

The whole process created quite an excitement in the neighborhood. It was a wet, muddy job, in which I had no sympathy from my neighbors. Two strands of No. 9 wire were run on two sides of it, to keep off the cattle. I estimated the expense to be about $12,—possibly it might have been $15. In two years the ground was covered with vines, some of them being six feet long. I soon began to harvest cranberries, and the fifth and sixth years, I think it was, I sold $50 worth each year. Since then the crop has varied from a few bushels to nothing. This year I do not get a cranberry, though at one time they looked well.

With this little experience, assisted by observation, I think now I could select situations

that in six years could be made to be worth $1000 per acre.

The first consideration should be flowage. If a meadow cannot be flooded at pleasure, it will amount to little to set the vines. They should be flooded in the winter, to keep them from the frost. They should be flooded two or three times after blossoming, to kill off the cranberry worm or maggot. He begins his depredations upon the small berries and continues till frost comes, unless he is checked in his evil ways. Flooding will drown him, and not injure the berries. One day under water is all-sufficient to quiet him. The ground should be flooded again at the full of the moon in September, if there is danger of frost, or at any time when they are liable to freeze. It is best to keep them on the vines as long as possible. When fully ripe the flavor is much better than when picked green. If they are flooded again directly after raking, there will be many berries saved by their rising and floating ashore.

The best possible place for growing the cranberry is below a reservoir that can be used at any time. A meadow thus situated, can easily be made to yield 100 bushels to the acre. On that portion of my little meadow, from which I took the turf and the vines got the start of everything else, I raked at the rate of 120 bushels to the acre. The soil should be turfed, which will cost from $50 to $100 per acre. This turf will, in many cases, pay for the labor of removing it. It becomes, by decomposition, an excellent material to use in barn-yards, hog-pens and stables. It is worth much more than nine-tenth of the farmers are aware of.

The final result depends somewhat upon the variety of vines set. A large purple berry sells best in market. The righ tway is to go into a meadow before the berries are gathered and mark those spots with stakes that produce the largest, reddest berries. Let those spots be the ones from which to take the vines. Try no experiments with the half-ripe looking fruit. They do not sell well in market.

Some cultivators cart on a coat of sand after the turf is removed, before setting the vines. If this is done, the sand should be clear from soil, —plastering sand would be best. Two inches deep is enough. It pays to put on the sand, if one can get it. Some cut the vines close to the roots, run them through a hay-cutter, sow them like grass seed, and harrow or hoe in. It is said that from every joint covered by the soil, will spring a root. If this be so, this is the right way to get the vines started all over the soil at once. The advantage is, they get the supremacy, and will not need so much attention to keep out weeds, grass and bushes. At any cost, these intruders should be kept out till the vines cover the ground, so as to leave no room for them.

I have thus hastily, yet perhaps clearly enough, given my notions of cranberry culture, to enable our Troy brother to decide whether he has the right situation for cranberry raising. If he has no reservoir to draw from, perhaps he can flow a portion of his meadow, and put the rest into vines, and thus be able to flood them at will; or perhaps he can find a chance away back in the woods, to build a dam, and thus secure the necessary supply of water.

The reason of the failure of my crop has been the short supply of water, for the last few years, at the right time. I have decided to flow a swamp, above my meadow, and thus have a constant supply at hand at all times. With this arrangement, that will cost me, perhaps, $20, I feel sure that the two half acres will be worth to me the interest of $1000 per year, and pay all expenses besides. My two patches are situated one above the other, so that the water that flows one will run upon the other. The swamp I shall flow is still higher up.

I wish farmers would turn more of their attention to this subject. It is one of the undeveloped interests of our State that should be looked after. The right time to do the work is when it can be attended to. The vines may be set in the fall or spring. Yours for the full development of the farming interests of our country. Z. Breed.

Weare, N. H., Oct. 12, 1868.

Remarks.—It is with much pleasure that we publish this prompt response to Mr. Farrar's request for information on the subject of cultivating the cranberry. The failure detailed by Mr. Breed is, if possible, more instructive than even his practical directions how to proceed in the preparation and management of a meadow. It is scarcely less important to know how *not* to do a thing than it is to learn how to do it, in any farm work. Many of our readers, as well as Mr. Farrar, will thank Mr. Breed for his valuable article.

For the New England Farmer.

FOOD.

No subject is of more vital importance, either physiologically or economically, to farmers or to others, than that of food; because we are almost wholly dependent on its proper use and distribution for the muscular strength and efficient industry which produces individual and national prosperity.

In a lecture on Food, delivered before the Society of Arts, England, Prof. Letheby, after presenting several elaborate tables of chemical analysis and relative values of different kinds of food, deduces the fact that foremost of all are those which come directly from the vegetable kingdom, and of these those

of the cereals are the most important. His remarks upon wheat seem to be of particular interest.

He says: "Different species of this grain are cultivated, but the most common in this country is *Triticum vulgare*, of which there is a summer and a winter variety.

"The grain varies a good deal in composition, according to season, climate and soil; but as a rule, the wheat of southern climates and warm seasons is richer in gluten, and of harder texture than that of colder climes. They are then called stronger grains, although the latter, from their being softer and kinder, give a larger proportion of flour. Some of the hardest varieties of wheat, as rivets, are used to strengthen the flour of new grain, which is always unmanagable, and to improve that of bad seasons and of damaged quality.

"The structure of the grain is like that of all the cereals; there is an outer siliceous and woody covering, which is altogether valueless as food; then there is a layer of rich nitrogenous matter, containing a digestive body called cerealine, and within that is the flour, which forms the great bulk of the seed.

"When ground whole, it forms brown meal, which is rarely used in England at the present time, although it was the common food of our forefathers, and even now is much employed in Westphalia to make the dark-colored bread called pumper-nickel. It contains from five to twelve per cent. of indigestible matter in the form of bran, the removal of which, according to Liebeg, is only a refinement of luxury.

"The practice at the present time is to bolt or sift the ground meal through sieves or silks of different degrees of fineness, and thus to remove the coarser bran. The products have different names in different places, and have also different values; but generally 100 lbs. of wheat will yield from 78 to 80 parts of good serviceable flour. The other products are about 2 parts of specks, or tails, or tippings; from 3.5 to 6 of coarse pollard; and from 4 to 10 of bran.

"Seconds flour is practically the best for domestic use; and of this there should be at least 80 per cent. obtained from the grain. Attempts have often been made to increase the produce; for as the bran contains a good deal of nitrogenous matter, and is, moreover, rich in fat and saline substances, it has been thought wasteful to remove it; but the experimental researches of Poggiale, the learned Professor at Val de Grace, have shown that at least 50 per cent. of the bran is perfectly indigestible, and may be passed successively through the bodies of four or five animals without undergoing change. It moreover acts as an irritant; and by hurrying the food through the alimentary canal, is very likely to cause waste. Those who labor hard, as railway navigators, invariably choose the whitest bread for food, believing that it is not only more digestible, but it is stronger, and will enable them to do more work. Without doubt, however, there is room for improvement in the treatment of flour, and in the complete utilization of its several constituents. M. Mege Mouries has invented a process whereby the outer skin only of the wheat may be removed, and from 86 to 88 per cent. of flour realized. The process was examined in 1857, and reported very favorably of by Dumas, Peouze, Payen, Peligot and Chevrelel, but I am not aware that it has come into use.

"M. Mege Mouries also directed attention to the fact that the bran contains a portion of very soluble nitrogenous matter, cerealine, which is of the nature of diastase, and has the property of dissolving starch. This, no doubt, might be utilized by treating bran with warm water, and then using the water in the manufacture of bread.

"The nutritive value of wheat is shown in tables No. 3 and No. 4. [These tables are not given on account of their length,] and although the average amount of gluten is there set down at about eleven per cent. it ranges from eight to fifteen per cent., the largest quantity being found in the wheaten flour of India, Egypt, South America and the South of Europe.

"It appears, too, that the quantity of gluten, as represented by nitrogen, increases with the coarseness of the flour, and so, also, does the amount of mineral matter.

"The test for a good flour are its sweetness and freedom from acidity or musty flavor; and its nutritive value, as far as gluten is concerned, is estimated by the process of Beccaria, who discovered gluten in wheat more than a century ago. A given weight of flour (say 500 grains) is made into a stiff dough, and is carefully washed by tender manipulation under a small stream of water. The gluten remains, and when baked it expands into a clear looking ball, which should weigh, when thoroughly dried, about fifty-four grains.

"Of all the preparations of flour, bread is the most important. I shall hereafter describe the process of making it, but I may here remark that it should not contain more than from 36 to 38 per cent. of water, and the other constituents, excepting salt, should be the same as of good flour.

"In practice, 100 lbs. of flour will make from 133 to 137 lbs. of bread, a good average being 134; so that a sack of flour of 286 lbs. should yield 95 four-pound loaves. The art of the baker, however, is to increase this quantity, and he does it by hardening the gluten through the agency of a little alum, or by means of a gummy mess of boiled rice, three or four lbs. of which will, when boiled for two or three hours in as many gallons of water, make a sack of flour yield 100 four-pound loaves. But the bread is dropsical, and gets soft and sodden at the base where it stands. A good loaf should have the following characters: kindness of structure, that is, not chaffy or

crumby or sodden; and sweetness to the palate and to the taste. Wheaten bread is best eaten on the day after it is baked, for new bread is difficult of mastication and still more difficult of digestion, because of its gummy nature. When it becomes stale it does not really get much dryer, but it undergoes a molecular change, which may be restored by heating the bread in a closed vessel to a temperature of 212°.

"Wheaten bread is preferred to all other varieties of bread, because of its sweetness, and because it may be eaten alone. The nutritive constituents of it are in the same proportion as in wheat—namely, as 1 to 6.5, and a little more than 2 lbs. of bread will supply the requirements of the system; although, as I shall hereafter explain, it cannot be used alone without loss of health and strength."

Thus I have gone on quoting, not knowing where to stop, till nearly all that he says upon wheat is given; and, if it is as interesting to others as to me, I am satisfied. The subject of our food is one of far too great importance to be passed over as lightly as many are inclined to do. Were they thrown daily into the haunts of disease, caused by imprudence in food, for one month, perhaps, a new field of labor would be seen, with but few laborers to stretch forth a helping hand. O. W. TRUE.

Farmington, Me., 1868.

For the New England Farmer.

SUPERPHOSPHATE—NORWAY OATS—MANURE.

The secretary of the Irasburg, Vt., Farmers' Club, Z. E. Jameson, Esq., furnishes the following brief report of the discussion at a meeting, Sept. 29, on the subjects of Superphosphate, Norway oats, and Manures and their use.

Z. E. Jameson had used one barrel of Vermont superphosphate. On corn it caused a better growth than ashes used in adjoining rows, but not so good a growth as that where a handful of compost from the hen house was used. The soil was sandy, the crop good, and no manure applied except in the hills. On turnips the result was satisfactory.

Wm. L. Jameson had used Croasdale's superphosphate on four rows of corn, horse manure on four rows and a compost of muck, lime, ashes and decomposed bones on four rows. The corn was all alike, and he concluded that it would not pay to buy it as a fertilizer.

Wm. L. Locke, Jr., used half a barrel of the Vermont superphosphate on hops with no visible benefit. On corn, the rows manured with superphosphate were not enough better than the unmanured to be discernable, until the stakes were pointed out that marked the rows.

The subject of the growth and production of Norway oats from seed obtained from the originator, being introduced, Wm. L. Locke, Jr., remarked that he sowed half a bushel where the ground became wet by rains, and they mostly died out. The result was six stooks, probably five bushels.

J. B. Fassett sowed one bushel; they were badly killed out in the spring by wet weather, but proved twice as productive as common oats, although common oats were not killed so badly by wet weather.

Wm. L. Jameson sowed one pint which yielded half a bushel.

Geo. B. Brewster sowed one bushel and had threshed the crop, which was fifty bushels.

A. Jameson sowed one bushel, which, while growing, seemed three times as good as the common oats by the side of them. Crop not threshed.

Z. E. Jameson sowed twelve quarts. The growth was not much better than common oats. Crop unthreshed.

J. B. Fassett had this year sixteen rows of potatoes sixty-seven rods long. At one end, on sandy ground, there were good potatoes; along further the ground was damp and the potatoes were excellent. These were manured by ploughing in strong manure. A part of the same field was manured on top after ploughing. Here the vines were large and the potatoes small. Will never manure on top for potatoes again.

Capt. E. Grant bought last spring some horse manure that was burnt very badly by its own heat; so much so, that what was called twenty cords, made in a barn cellar, shrank to five. He applied it to ground for oats, and in comparison with other cow stable manure it proved as good a fertilizer, and he made up his mind that burnt or firefangled horse manure is as profitable to buy as any, and he did not care how much it was burnt. When he lived in Maine, a farmer there bought horse manure and piled it in large heaps where it would heat, and when applied to the land for corn, gave most excellent results.

The secretary suggested that it might be more profitable to buy manure after twenty cords had been reduced to five, than it would be for the farmer or stable keeper to allow his manure heaps to shrink at that rate.

ART AND SCIENCE OF FARMING.

The following extract from the introductory chapter of Mr. Johnson's new book, "How Crops Grow," will illustrate the author's style of writing and manner of treating his subjects. After having read the volume carefully, the editor of the *Country Gentleman* says: "In style, Prof. Johnson, is exceedingly condensed and concise, although clear and logical. We have not found an indistinct expression, while repetitions are avoided, and there is no attempt at anything like fine writing—the work is one

of fact and not of the imagination. With all that has been written on corresponding subjects during the last generation, we cannot be far amiss in asserting that the volume before us is *wholly new*—new in its language, as in its illustrations and arrangement, a product from the virgin ore and not from the scraps and waste metal of the past. We venture to add that it fills a place now entirely unoccupied in English literature."

We hope the annexed extract, with the favorable opinion of our contemporary will induce many farmers to purchase this book and make it their winter's study. Farmers' Clubs are often at a loss for fit subjects for discussion, and the introduction of frivolous ones sometimes offends sensible men, and proves fatal to the success of the association. Might not this volume be adopted as a sort of class book, by farmers' clubs? The book might be placed upon a stand or table, and each individual in turn called upon to read a page, more or less; all present having the privilege of asking any question as to the meaning of words or expressions used by the writer. A little experience would soon regulate details of procedure, and bring out thoughts and knowledge of facts from the various members of the club in such order as might be agreed upon. But to the extract:—

The *art* of agriculture consists in certain practices and operations which have gradually grown out of an observation and imitation of the best efforts of nature, or have been hit upon accidentally.

The *science* of agriculture is the rational theory and exposition of the successful art.

Strictly considered, the art and science of agriculture are of equal age, and have grown together from the earliest times. Those who first cultivated the soil by digging, planting, manuring, irrigating, had their sufficient reason for every step. In all cases, thought goes before work, and the intelligent workman always has a theory upon which his practice is planned. No farm was ever conducted without physiology, chemistry and physics, any more than an aqueduct or a railway was ever built without mathematics and mechanics. Every successful farmer is, to some extent, a scientific man. Let him throw away the knowledge of facts and the knowledge of principles which constitute his science, and he has lost the elements of his success. The farmer without his reasons, his theory, his science, can have no plan; and these wanting, agriculture would be as complete a failure with him as it would be with a man of mere science, destitute of manual, financial, and executive skill.

Other qualifications being equal, the more advanced and complete the theory of which the farmer is the master, the more successful must be his farming. The more he knows, the more he can do. The more deeply, comprehensively, and clearly he can *think*, the more economically and advantageously can he work.

That there is any opposition or conflict between science and art, between theory and practice, is a delusive error. They are, as they ever have been and ever must be, in the fullest harmony. If they appear to jar or stand in contradiction, it is because we have something false or incomplete in what we call our science or our art; or else we do not perceive correctly, but are misled by the narrowness and aberrations of our vision. It is often said of a machine, that it was good in theory, but failed in practice. This is as untrue as untrue can be. If a machine has failed in practice, it is because it was imperfect in theory. It should be said of such a failure—the machine was good, judged by the best theory known to its inventor, but its incapacity to work demonstrates that the theory had a flaw.

But, although art and science are thus inseparable, it must not be forgotten that their growth is not altogether parallel. There are facts in art for which science can, as yet, furnish no adequate explanation. Art, though no older than science, grew at first more rapidly in vigor and in stature. Agriculture was practised hundreds and thousands of years ago, with a success that does not compare unfavorably with ours. Nearly all the essential points of modern cultivation were regarded by the Romans before the Christian era. The annals of the Chinese show that their wonderful skill and knowledge were in use at a vastly earlier date.

So much of science as can be attained through man's unaided senses, reached considerable perfection early in the world's history. But that part of science which relates to things invisible to the unassisted eye, could not be developed until the telescope and the microscope had been invented, until the increasing experience of man and his improved art had created and made cheap the other inventions by whose aid the mind can penetrate the veil of nature. Art, guided at first by a very crude and imperfectly developed science, has, within a comparatively recent period, multiplied those instruments and means of research whereby science has expanded to her present proportions.

The progress of agriculture is the joint work of theory and practice. In many departments great advances have been made during the last hundred years; especially is this true in all that relates to implements and machines, and to the improvement of domestic animals. It is, however, in just these departments that an improved theory has had sway. More recent is the development of agriculture in its chemical and physiological aspects. In these directions the present century, or we might almost

say the last thirty years, has seen more accomplished than all previous time.

* * * * * * *

The farmer deals with the plant, with the soil, with manures. These stand in close relations to each other, and to the atmosphere which constantly surrounds and acts upon them. How the plant grows,—the conditions under which it flourishes or suffers detriment,—the materials of which it is made,—the mode of its construction and organization,—how it feeds upon the soil and air,—how it serves as food to animals,—how the air, soil, plant, and animal, stand related to each other in a perpetual round of the most beautiful and wonderful transformations,—these are some of the grand questions that come before us; and they are not less interesting to the philosopher or man of culture, than important to the farmer who depends upon their practical solution for his comfort; or to the statesman, who regards them in their bearings upon the weightiest of political considerations.

HOGS vs. BUGS.

For some time back the best and most scientific fruit growers in the West have been agreed, that practically there are but two methods universally available for fighting the curculio; namely, either 1st, by jarring the plum trees continually, or 2d, by allowing hogs the run of the orchard all through the summer months. The first method produces an immediate effect, because the "Little Turk" is thus arrested at once in his mischievous career, and prevented from stinging any more fruit. The second method is prospective in its effects, and operates chiefly through the hogs picking up all the wormy fruit as fast as it falls, and thus preventing the larva of the curculio from going underground, and generating a new brood of curculio to sting the fruit at a subsequent period.

We propose in the following paragraphs, without at all undervaluing the first method, to demonstrate by plain, hard, practical facts, that the second of these two methods produces most gratifying results when systematically carried out for a series of years, even without any regular jarring of the trees. The only exception to be made is in the case of the cherry, which unlike all other stone fruit, does not fall prematurely to the ground when bored up by the larva of the curculio. Hence, so far as regards the cherry, we must depend entirely upon the jarring process to subdue this insect.

But the plum curculio and its allies are not the only insects that we can successfully attack through the instrumentality of the hog; neither is stone fruit the only crop that can be protected in this manner. For the last fifteen years or so, pip fruit, namely, apples, pears, and quinces, have been annually more or less deteriorated by the apple worm or larva of the codling moth boring into their cores, and filling their flesh with its loathsome excrement. Unlike all the snout beetles that infest stone fruit in America, this is an imported insect, which was originally, about the beginning of the present century, introduced from Europe into the Eastern States, whence it has gradually spread westward into the Valley of the Mississippi. The facts which we shall presently quote prove that hogs are death upon this insect, as well as upon the plum curculio, picking up the wormy apples as fast as they fall, and greedily devouring them without any squeamish misgivings as to the wholesomeness of their living inhabitants. It is not at all improbable, either, that hogs may pick up and devour the larva of the codling moth after it has left the fallen fruit, and while it is on its travels for the trunk of the apple tree. For instead of going underground, like the larva of the plum curculio, this larva spins a cocoon above ground, and usually in the chinks of the bark of the tree upon which the apple that nourished it grew. Hence, as the apple worm is of some considerable size, some specimens being almost an inch long, a hungry hog would scarcely consider it "too small business" to pick up and devour as many as could be found travelling along the surface of the earth.

David E. Brown, one of the largest fruit growers near Alton, South Illinois, has for about five years kept both hogs, and, at times, sheep, in his apple and peach orchards. His fruit is not infested by insects nearly as much as that of his neighbors, although he employs no other precaution whatever to guard against the depredations of fruit-boring insects. His peach trees are also free from borers, though he takes no pains to worm his trees. His hogs keep in good condition on the fallen fruit. These facts were confirmed both by Dr. E. S. Hull and by Mr. B. L. Kingsbury, of Alton.

Mr. Caughlin, in the Report of the Alton Horticultural Society for July 2, 1868, "gave favorable experience in regard to hogs eating fallen peaches. His peaches were very free from worms this year. He attributes this to the fact, that the hogs in his orchard destroyed so many of the larvæ last year."

We know a cultivator who had heavy crops of plums for seventeen years in succession—his swine for these seventeen years, without a season's interruption, being allowed the run of the yard.—*Country Gentleman*, 1868.

Jotham Bradbury, residing near Quincy, Ill., has an old apple orchard, which many years ago used invariably to produce nothing but wormy and gnarly fruit. A few years ago he ploughed up this orchard and seeded it to clover, by way of hog pasture. As soon as the clover had got a sufficient start, he turned in a gang of hogs, and has allowed them the range of his orchard ever since. Two years after the land was ploughed, the apple trees produced a good crop of fair,

smooth fruit, and have continued to bear well ever since.

Suel Foster, of Muscatine Iowa, reports as follows in the *Transactions Ill. State Hort. Society*, 1867, p. 213—: "I have twenty-four acres of my orchards seeded to clover, and last year I turned the hogs in. I now observe that where the hogs ran last year, the apples have not one-fourth the worms that they have on other trees. I this year turned the hogs into my oldest (home) orchard."

It is important, when hogs are employed for the purpose of picking up fallen fruit, that they should be kept moderately hungry, and not be gorged every day with corn so as to make them too lazy for work.—*American Entomologist.*

ECONOMY OF KEROSENE.—By a recent experiment, it was ascertained that one pint of coal oil, costing six cents, fed one lamp during six evenings, or for the space of twenty-eight hours, averaging four hours and forty minutes each evening; two lamps of lard oil having been required for the same service. The cost of the lard oil was four cents per evening; that of the coal oil one cent. The advantage of coal oil over sperm oil is about the same.

EXTRACTS AND REPLIES.

KEEPING CABBAGE THROUGH THE WINTER.

Can any of your readers tell me the best way to keep cabbage through the winter till the middle of March? Will they not keep just as well with the stump cut off? PHILIP.

Middlesex County, Mass., 1868.

REMARKS.—The method which we have practiced for years for preserving cabbages for family use, is as follows:—Cut off the stump close to the head and pull off loose leaves. Cut clean straw or hay and cover the bottom of a barrel or box with it and sprinkle the straw with clean water until it is quite wet. Add a layer of heads, then cover with more wet straw and go on. Put the whole in a cold place and they will keep until May in excellent condition. No matter if they freeze a little. This is a clean and easy method. The barrel need not be headed.

Our correspondent L. M., of Hatfield, Mass., says, "I have tried hanging cabbages in the cellar, but they wilt and lose all their flavor. My way is this:—I let them stand in the fall as long as possible; dig a trench about a foot deep, cut off the stumps close to the head, strip off the loose leaves and cover them with the earth taken from the trench. They must freeze and thaw with the ground, which makes them brittle and tender, and very much improved in flavor. They must be taken out of the ground as soon as the frost leaves, otherwise they rot. I have practiced in this way for forty years and never had a head rot. By way of experiment I have thrown in a few apples with the cabbages; they all came out sound in the spring. Try it.

The *Prairie Farmer* gives the following, as the method practiced by the gardeners of Chicago. Select a dry knoll where the water will not settle, dig a pit say five feet wide, twelve feet long and two feet deep, throwing the dirt a little back from the edge of the pit. Set strong posts eight feet long, two feet in the ground in the middle of each end, and lay on these a good stiff ridge pole and pin it fast. Make a roof of stakes or planks long enough to reach from ridge pole to edge of pit, and cover them with a little straw and six or eight inches of dirt, digging a trench around the pit; beat down the dirt hard and smooth, so that it will shed water, or, what is better, sod it over in the spring. Make a door in each end of pit to ventilate in mild weather. Store the cabbages head down, two layers deep. A pit of the dimensions mentioned will hold nearly 200 heads of cabbages. In very severe winter weather bundles of straw may be set against the doors. A very cold winter may require a thicker covering than here recommended. But generally we think this will do.

CEMENT WATER PIPES.

The danger of the poisonous effects of lead pipes for the conveyance of water for domestic purposes has caused much inquiry for some safer material for the construction of aqueducts, and we have received several inquiries for information and advice upon the subject. In reply to a late inquiry by a correspondent, we have received from Benjamin Livermore, of Hartland, Windsor County, Vt., a circular in which he claims to have discovered and pâtented, after a long experience in the business, a process by which he can lay a continuous cement water pipe at a less cost than lead or iron. Attached to his circular are the recommendations of Hiram Harlow, late Superintendent of the State Prison, for whom he laid 220 rods; of N. B. Safford, of White River Junction, Vt., who has had nearly a mile in length in use for more than three years; of Washington Whitney, of Winchendon, Mass., 42 rods; of L. M. Hills, Amherst, Mass., 180 rods; and of many others. In one case the lead pipe removed was sold for enough to pay the expense of the cement pipe which took its place.

FINE AND COARSE WOOLED SHEEP.

Much has been said in your valuable paper during the past year as to the relative profits of fine and coarse wooled sheep.

I commenced farming life thirty years since with keeping fine sheep, but very soon found it a losing business, and immediately sold my fine sheep at a loss of a large per cent., and bought Cotswolds, which I have been breeding ever since.

It may help some of the readers of your paper to say, that while my fine sheep did not pay for

their keeping in the wool which I sold from them, the Cotswolds have every year paid a good per cent. on cost. The sales from my forty Cotswolds last year were a little short of four hundred dollars, or a fraction over ten dollars a head, besides keeping my flock good. My buck lambs averaged over a hundred pounds a head. Mr. George N. Sanborn, of Laconia, N. H., writes me that a pair of twin lambs bred from a Cotswold buck from my flock on a fine sheep, weighed 109 and 115 pounds. It often happens that a cross of pure blood Cotswold on strong Merino ewes will produce a progeny that will outgrow the parents on either side, and a second cross are always prolific.

I have twice exhibited sheep at our Connecticut State Fair, with three lambs brought up entirely on the sheep. The first three weighed 100, 104, and 108 pounds, the next three 100 each. A cross of the Cotswold on the sheep of the Northern States, will make as good market lambs as can be produced. I once raised a pair of Cotswold lambs, one of which weighed at seven months 144 lbs.

From present appearances it will be a long time before the supply of combing wools will be equal to the demand. T. L. HART.

West Cornwall, Conn., Oct. 1, 1868.

REMARKS.—What say the breeders of the Cotswold and other coarse wooled sheep to the charge of some of the breeders of the Merinos, that the former are of such roving habits, that the common fences of New England are insufficient to keep them in place?

HEREFORD CATTLE.

As I wish to purchase a few "thoroughbred" Hereford cows or heifers, I would like to ascertain who are the breeders of this kind of stock in this country or in Canada. Can you tell me of any way to do so? Is there a Hereford Herd Book? If so, where can I obtain one?

If you can give me the desired information you will greatly oblige a constant reader of your valuable paper.

As I have some of the "Underwood stock," I want something different to cross with it. I have a heifer calf seven months old that girts five feet and weighs 620 pounds. H. C. BURLEIGH.

Fairfield, Me., Oct. 20, 1868.

REMARKS.—We publish in another column some extracts from Mr. Allen's American Cattle in relation to the Herefords. In reply to our correspondent we would say that we know of no thoroughbred Herefords nearer than the herd of H. Cochrane, Esq., Compton Centre, Canada East, or rather Province of Quebec. Some time since we published some account of the herd of Herefords owned by F. W. Stone, Esq., of Guelph, Canada West, who, after having kept the Durhams and the Herefords on the same farm and under the same conditions, gives the latter the preference. Mr. Sanford Howard who examined Mr. Stone's stock last July, says that "all persons who have had any thing to do with them concur in stating that the Hereford cows give, on an average, as much milk by the season as the Short-horns, while some experiments that have been made show that in richness of milk the Herefords are superior." We presume that there has been no American herd bood of the Herefords published in this country. Marks of a Hereford cross are often seen in the cattle from Maine offered for sale at the Brighton cattle market, and it may be an inquiry of some interest, how far the acknowledged superiority of working oxen from that State is owing to a strain of the Hereford blood.

We have also received from "A Subscriber," in Webster, Me., inquiries similar to those of Mr. Burleigh, to whom we must say that we do not know of any breeder of the Herefords in Massachusetts. If there are any they will see the necessity of advertising the public of the fact.

ABORTION OF COWS.

About the first of September, one of my cows slunk her calf, and in about ten days after another, and in ten days more a third one. I can not account for the facts. Can you give any information upon the case through the FARMER?

BENJAMIN ADAMS.

Amherst, Mass., Oct. 23, 1868.

REMARKS.—This disease began to manifest itself in the dairy sections of New York about twelve years ago, and has been gradually increasing ever since. In a memorial presented to the Legislature of that State in 1866, by the President and Secretary of the State Agricultural Society, it is estimated that in that year one-quarter of all the cows in Herkimer County aborted; in Oneida, 20 per cent; in Otsego, 15; in Lewis, 12 per cent. This was an alarming statement, and the legislature at once appropriated a liberal sum of money for the expense of a thorough investigation of the causes of the disease. The first report of the State Commissioners was made last winter, and was mostly of a negative character—affirming what did not, rather than what did, cause the disease. The few practical lessons of this report are summed up by the *Country Gentleman* as follows:—that farmers should raise their own heifers—that the farmer should not sell to anybody else the cow which he thinks too likely to abort to be retained in his own herd—in other words, that determined efforts should be made, in the districts specially concerned, to prevent the dissemination of the difficulty by the purchase and sale of animals not known to have been free from it previously—to secure the feeding of cows so affected for the butcher, or their isolation from all unaffected animals, if the owner choose to retain them,—and, in case new and healthy cows are brought upon a farm, the thorough purification of the stables, and, if possible for a season or two, the use of different pastures from those which the diseased animals have lately grazed.

A correspondent of the same paper, who acknowledges himself indebted for his facts to Mr. J. Barlow, of the Veterinary College, Edinburgh, thus speaks of the fact that odors arising from cows that have aborted give rise to abortion in other cows:— "It is a well known fact, that by the sense of smell cows detect when one of their companions has calved. If the birth takes place in the pasture, cows will smell the place of its occurrence, and loiter about it for days and weeks after. When a cow calves in the stable, other cows

are at once aware of it, since they look about them, snuff their noses, and make the fondling noise usually uttered towards their young. When in a herd of cows, one or two cases of abortion occur, or delivery takes place, from whatever cause, other pregnant cows will cast their calves, and that *timely separation of those aborting from the yet pregnant cows, saves these latter from abortion.*"

It is said that cows in the wheat raising districts of New York, where they feed largely at straw stacks, are nearly exempt from this trouble; hence a feed of wheat shorts, or oats, has been recommended, in connection with good care generally.

The New York commission have been prosecuting their inquiries and investigations during the present season, and it is to be hoped that they will be able to make a report this winter which will throw some light upon this subject.

We might give our correspondent any amount of theory upon this subject, but our stock of practical information, we are sorry to say, is exceedingly meagre. The Little Falls, N. Y., Farmers' Club have debated and investigated this subject extensively during the past five years or more, without arriving at any satisfactory conclusion as to the cause or cure of this disease; but we believe that it is generally agreed that an animal that aborts, or shows any signs of doing so, should at once be separated from other cows, with the most careful removal of all evidences of the disorder. Many advise that such animals should not be suffered to remain upon the farm.

HEADS OF A DISCOURSE ON BUTTER-MAKING.

I have been thinking, Mr. Editor, of the request that you made last week, while examining the three tubs of 165½ pounds of butter that we have made from our two cows since last spring, besides what milk, cream and butter a family of seven have used, to write out a statement of our process for the FARMER. But as I am not great at sermonizing, at the best, and am particularly busy just now with my fall work, which, in consequence of dull weather, has got rather behind hand, I will not attempt to elaborate the following points, or heads, which have been suggested to my mind while thinking over your request.

1. Healthy and well fed cows. Mine, you know, have a little cob meal.
2. A sweet airy place for the milk and cream.
3. Thoroughly washed and scalded pans.
4. Milk to be skimmed before too sour.
5. Cream in the pot to be stirred often in hot weather.
6. Cream to be churned twice a week.
7. The buttermilk to be thoroughly worked from the butter.
8. The butter, if to be kept, must be well salted.
9. One week previous to putting the butter into the firkin it is filled with sour milk, which should be stirred every day and changed every three days; then washed, scalded, cooled with cold water and rubbed over with salt.

The importance of my "secondly"—a sweet, airy place for the milk and cream—is not, I think sufficiently appreciated. Few would think of stirring into their milk or cream, portions of their boiled victuals, pickles, bacon, lard, baked beans, pot skimmings, &c., but many do permit the essence or smell of these and many other things, both good and bad, to mingle themselves with the milk, cream and butter. But as I do not propose to argue any of these points, I will close with the remark that the merchant who had my butter, gave me quite a puff for its appearance and good quality.

Felchville, Vt., Sept. 30, 1868. T. S. P.

REMARKS.—At the time these three tubs were sent to market, we understood that the fourth had been commenced upon; showing an amount of produce creditable alike to the little dairy of two cows, and to the five motherless girls, the oldest of whom is only sixteen, who have had the charge of the milk and the other household work, and who with a younger brother and their father make up the family of seven persons before alluded to.

POULTRY AND POULTRY BOOKS.

In reply to "An Old Subscriber's" inquiry I would say:—First, I think he cannot better his stock of hen literature unless he procures a late English work by Tegetmeier, which costs nine dollars and is a valuable treatise.

Second, there are no pure Creepers in this section, still they are to be seen, one or two in a place, hereabouts. In color, the gray seems to predominate, while some are of a reddish brown and others of a cinnamon color, and occasionally a few white ones are to be met with. They all seem to be highly prized as good layers, setters and nurses, and for their heavy plumage and short legs. From my own experience, however, I find that their short legs are both hardy and strong for scratching, and that they do twice the amount of it that the Brahmas do. If "Old Subscriber" is not satisfied with Brahmas, Leghorns and Black Spanish, I should advise him to try the Golden Pencilled Hamburgh, as the handsomest, best layers, and in my experience, the most profitable fowls ever kept, and they seem to sustain the same good name with all who are acquainted with them. My neighbor, from whom I got mine, calls them superior to any of the many breeds which he has ever raised. His first trio he told me cost him $18, but he realized $9 from eggs sold, and also some twenty chickens from them the first season. He received them June 2, and from that time till September 8, there were but eleven days in which he did not get two eggs per day, and only three in which he got none. I see that Tegetmeier recommends them very highly. He calls them truly the cottager's fowl, and they are known in some parts of England as the "Dutch Every-day Layers," and are very minutely described in his work. I do not know where this variety of fowls can be obtained, but I understand their eggs are to be advertised the coming season. AN OLD READER.

Worcester, Mass., Oct. 21, 1868.

EXPERIMENTS WITH HAYWARD'S FERTILIZER.

Last spring I planted some cucumbers, alternating the hills with manure and the mineral fertilizer of Dodge Hayward, by using half a bushel of fine manure in one hill, and one quart of the fertilizer in the next. Both were forked in, to the depth of a foot. The plants came up and grew about alike, until two inches high, when the weather continuing dry, the manured hills got the start and outstripped the others. Coming on rainy, the fertilized took a new start, kept it, and gave the first and last cucumbers, as well as two-thirds of the whole crop, as the manured hills dried up three weeks in advance of the others.

On one rod of ground I forked in fourteen pounds of the Hayward fertilizer and sowed to onions. None came up. I then forked the bed over and sowed again to onions, after testing the

seed and finding it good. Result, same as before, no onions. Having planted Brussels Sprouts on the fertilizer, at the rate of 500 pounds to the acre, I transplanted some fine plants to the onion bed. They are now, on an average, 15 inches high, with no heads, while those on the fertilizer at the rate of 500 lbs. per acre, are very fine and thrifty,—some of them being three feet high, and full of heads.

I planted half an acre, four rods by twenty, to potatoes, Davis' Seedling. On one-half of the strip I spread 450 bushels of fine old barn manure, occupying man, horse and wagon one and a half days. On the other half, I sowed broadcast 200 pounds of the fertilizer, which occupied man, horse and wagon half an hour. Cost of fertilizer, $3. Both manure and fertilizer were harrowed in. The potatoes were planted in drills. Used ten bushels of seed on the half acre. On the 9th and 10th of October I dug eight rows of the twenty-seven on the strip,—rows running lengthwise. On the manured half of those eight rows I had 14½, and on the fertilized half of the rows 15½ baskets of potatoes, weighing 63½ pounds to the basket. Deducting the small potatoes, one and a half baskets, the result of my crop will be one hundred bushels of as good Davis' Seedlings as one could wish from the half acre, or 30 bush from the eight rows. This ground failed to produce crops of either carrots, beets or parsnips which I planted and sowed upon it last year.

On the last heavy snow which fell in the spring, I sowed broadcast 250 pounds per acre of the fertilizer on twelve acres of grass. I have cut more than double the hay this year that I did last, and the roots are spreading and covering the ground very remarkably. These experiments have convinced me that a reasonable amount of this fertilizer is preferable to a large quantity. I shall never again use to exceed 500 pounds per acre in any one year, that being in my opinion sufficient for two to three successive crops.

Edgar A. Robbins.

Wrentham, Mass., Oct. 20, 1868.

EXPERIMENTS WITH HAYWARD'S FERTILIZER.

I planted an acre and three-fourths of corn with 2800 pounds of this fertilizer, spread broadcast, and the land cultivated thoroughly. Furrowed and planted with no other fertilizer. This land was light and loamy, and produced last season one ton of hay. There were about forty-five bushels of corn to the acre. About a week ago, I called on Prof. E. A. Robbins, of Wrentham, and found him ploughing out his potatoes raised on this fertilizer. The potatoes looked very nice and fair. I examined very closely to see if I could discover any disease in them, but could find none.

Foxboro', Mass., Oct. 18, 1868. H. C. Perry.

CURES FOR A COW'S COUGH AND WARTS.

I cured my cow of a severe cough by giving her three eggs a day for three mornings in succession, shells and all, by putting them down her throat; then gave her a large spoonful of pulverized saltpetre every other morning till I had given her a pound. She is entirely cured.

I cured an innumerable quantity of warts on the same cow with salt grease, made very salt, and applied every other morning. Milkmaid.

Machiasport, Me., Oct. 7, 1868.

HARRISON POTATOES.

During the present season Mr. Benj. Young, of Danversport, has raised from *one bushel* of Harrison potatoes *forty-three bushels*, which are of fine quality and appearance. They were raised on about fifteen rods of land that had been very lightly manured, and while other kinds of potatoes, growing at the side of these, were found affected with rot, these were entirely free. J. S.

Danversport, Mass., Oct. 10, 1868.

HAY PRESSES.

Will you or some of your many subscribers, inform me which is the best kind of hay presses now in use, and where it can be obtained.

Alburgh, Vt., Sept. 21, 1868. B. H. B.

PATENTS ON VEGETABLES AND FRUITS.

In his *Magazine of Horticulture* for October, Mr. Hovey, the editor, and also the originator of the valuable strawberry bearing his name, discusses at some length the question, "How shall we encourage and stimulate the production of new varieties of Fruits and Plants, and in what manner secure a proper reward to the producer?"

After alluding to the great value of some of the varieties that have been introduced within a comparatively few years, and to the great amount of time and labor expended on their production, Mr. Hovey reviews the arguments of those who would extend the laws which protect the inventor of a "clothes pin or a goose yoke" so that the propagator of a new plant or fruit should receive a patent for it; by which, as suggested by the *Horticulturist*, he could "require payment, when he sells the plant, for the right to manufacture and sell other plants in a specified territory. If it be valuable, the purchaser of the right to that territory may dispose of rights to others, and thus refund himself for what he paid the patentee. Should the plant be offered for sale beyond the limits of the territory sold, the patentee will become aware of it, and can prosecute for infringement precisely as in the case of a machine or process."

Mr. Hovey then gives his own views of the subject as follows:—

We must admit that this appears to be a very good mode of protecting the originator of new plants, and securing to them the profits of their sale, if it can be carried out. But there are many objections to it which the writer has not stated, and we fear that infringements would be so general that little good would be effected after the first sale to local agents.

After all, it is a question whether horticulture would secure any permanent benefit to be hedged about with patents, and subject to the injunctions and litigations which would be sure to follow; it would, we fear, lose much of its character as a science and art, and lessen its hold upon those who view it not as a commercial speculation but as a source of pure enjoyment and delightful recreation. The benefits which might be secured to the inventor of plants, would in the end hardly compensate

for the injuries which would result from any attempt to render art subservient to the "almighty dollar."

It is not to be disguised, that of all the new fruits, or new plants, or new vegetables which are yearly originated and brought to notice, not one in fifty is worthy of notice, and the few which are really meritorious scarcely ever fail to bring a reasonable reward to the producer, not by any means oftentimes in proportion to their value, but sufficient to stimulate and encourage to continued exertions.

A patent which would have secured to Mr. Knight ten thousand pounds sterling for the various fruits which he originated, valueless as they mostly are now, would have been of far less value than the gratitude of millions for his life-long labor in the hybridization and production of new varieties; and the same may be said of those who have succeeded him in similar works. The inventor of the clothes pin or the goose yoke will be forgotten, if indeed he be known at all, when the originator of a really valuable fruit or flower will be known to millions.

We would do all in our power to encourage and reward the producer of new varieties. But first educate the public taste to the appreciation of those only of superior excellence, and to ignore those which do not come up to the standard. This having been accomplished, the really meritorious will never lack appreciation or the originator fail to receive his due reward.

CHESTER PIG.—At a late meeting of the Irasburg, Vt., Farmers' Club, Dea. Fassett, on being asked how he liked the Chester pig that he bought of Mr. Baker, replied, "At the time I carried home that pig I had some others that I called good pigs of about the same age. Out of curiosity I weighed them. I put the Chester pig with one of mine that weighed ten pounds the most, and have fed them together. The Chester pig will now weigh ten pounds more than the one I raised. This shows that there is something in blood." These were July pigs put together when five weeks old. October 24 our cattle market reporter mentioned a Chester hog that he saw at Medford, which weighed 855 pounds, having gained 531 from the 10th of June, till he was sent off to market,—a little short of five pounds per day. It was raised in Burke, Vt., by J. Hunter, Esq.

CORN HARVESTER.—A machine was exhibited and tested at the late Fair at St. Louis, which is claimed to be the first machine ever invented and successfully used for harvesting corn. In company with a special committee, a large number of gentlemen witnessed its operation in a field of corn, and after explanations and speeches it was voted a complete success. The *Journal of Agriculture* says it is pushed before two or four horses, and in general appearance resembles Rugg's Reaper. Its shucking or snapping principle consists in two grooved cylinders which are turned by a drive wheel with great velocity. The stock is passed between these cylinders, and the ear being larger is caught, snapped, thrown into a receiver, and from thence carried by means of an elevator into the wagon, which is driven alongside of the machine. It is designed to take two rows at a time, and to be managed by one man, so that by means of two or three wagons, some fifteen or twenty acres of corn can be gathered in a day.

For the New England Farmer.

FERTILITY OF OUR FARMS.

How can an Upland Farm be Cultivated and kept from Running Down?

The following abstract of the discussion of this question by the Irasburg, Vt., Farmer's Club, was written out by the Secretary, Z. E. Jameson, Esq., for the FARMER.

Geo. B. Brewster said that, in his opinion, it is a difficult matter to keep a farm up, unless you can draw on muck or manure. By doing this you can get the farm started in raising good crops, and then by feeding them upon the farm, more manure is made and good crops can be raised right along. He thought it one of our greatest errors to graze our fields in spring and fall. We should have pasturing enough to carry the cattle all through the grazing season till winter. Cattle in the fields will tear up the roots of grass and diminish the hay crop. If we plough up pastures we should manure them, unless it may be some knolls enriched by sheep.

A. Jameson thought it a good plan to plough the pastures, as the crops raised will make manure to bring up the rest of the farm, and then when they are stocked to grass again, the feed is sweeter, more of it, and cattle like it better. He had seen pastures in New Hampshire ploughed up in June and summer fallowed, that yielded first-rate crops of wheat, rye or potatoes, especially on ground where sheep had lain. He thought that muck, unless mixed with manure or something else, is poor stuff,—hardly worth drawing. He had tried it on his land, by putting a number of loads on a dry knoll and ploughing it in, and he never could see that the crops were a mite better, and where Mr. Brewster used it he could see no benefit from it.

Geo. B. Brewster admitted that pasture turned over will give a good crop, but asked will it be as good in future? His experience is that where he ploughed his pasture the feed is much less than on land adjoining which has been in grass ever since it was cleared. On the unploughed part, the feed is a complete mat; but where it had been ploughed and

grain raised it is mossy, with but little grass. His muck had been referred to. Where he put it on near the road, the soil was sandy and so light that he thought manure would have made little show; but further back where he raised his Norway oats, he had a good crop of corn, with no manure but muck that had lain in the barn yard. He intended to use more in future, and believed it would pay.

Wm. L. Locke, Jr., said he thought we plough too much land and sell too much grain. We plough more than we can manure. To keep our farms up we must increase the manure piles. He had used sawdust for bedding for cattle and hogs, and it prevents all smell in the pens or stable and keeps the cattle clean. He manured some of his corn with sawdust from the hog pens and it gave an excellent crop. In feeding grain, we not only get more and better manure and keep more stock, but get more profit from the stock. He knew one man who makes from 200 to 240 pounds of butter from each cow, and he keeps ten or twelve. This is more than we average, and it is done by good feeding to good cows.

Z. E. Jameson said the question is not how shall we get good crops next year and the year after, but what plan of management will allow us to sell all animal products, such as beef, pork, wool, butter and cheese to pay expenses, and yet have the land continue fertile as does the land in China, and the plains where the Patriarchs pastured their flocks. There must certainly be a way to make and keep land fertile, for I have read that there was once a heath or moor in England of such extent that persons would often become lost and wander days and nights on its broad expanse, but now, by the culture of turnips, the land has become fertile, and flocks of large Lincoln sheep surround the white cottages of the tenants. It seemed to him that where land will produce a fair crop of clover, it would be best for us to plough in green crops as well as feed animals, and if the result is here as in other sections of country, we shall find it possible to cultivate an upland farm and keep it fertile.

Wm. L. Jameson said that some think muck is of little value. What is muck? Vegetable matter. What is manure? It is simply vegetable matter. Some muck, to be sure, needs preparation to make it valuable, such as exposure to frosts through the winter or mixture with ashes or lime, while from other deposits it is good to apply directly to the land as topdressing or in any other way. He had used a good deal, but not half as much as he wished he had, nor half as much as he should in future. If we keep one hog supplied with plenty of this material it will not only absorb all odors but make enough good manure for an acre of corn. He knew it could be done. He had raised, year after year, at the rate of 120 to 180 bushels of ears per acre with such manure. Then a compost heap of a layer of muck with a layer of manure, till you get it as deep as you wish, will in a few months, become equal, load for load, to barn-yard manure. He believed in a theory lately published that manure in a compost acts as yeast, and causes a change in the whole mass.

This ploughing of pastures is a grand way to run down a farm. You take off crops and give back no return, and if the cattle gradually enrich it again, it impoverishes some other portion, and all sink together. Our children will not be contented to till acres that are made barren by our mismanagement, when they read of the fertile lands of the West or South. It is better to invest all surplus income in improvements, rather than in bonds or interest bearing stocks. He bought his farm for $800 about sixteen years ago. Its produce is doubled and its value is now over $3000. An adjoining farm of twice the acres, was then valued at $2500. Its produce is much decreased, and its price is about $3000. To pay for a farm, raise good crops, for good crops pay debts.

A short discussion then followed in regard to hiring help, in which two opinions were expressed,—one that when there was work to do it would pay to hire it done; the other that it is best to let some things go undone, rather than hire.

For the New England Farmer.

GOODRICH SEEDLING POTATOES.

We read of enormous yields from single pounds of potatoes cut to a single eye and spread over a large surface of no doubt the very best land, with care and treatment to correspond; but what farmers want to know is how these varieties yield with ordinary field culture.

I planted two and three-fourths acres to Goodrich Seedlings this year. The yield was six hundred and fifty-two bushels.

The Harrison was planted on a quarter of an acre of dry old ground, with no manure but a handful of hen droppings and ashes in the hill. The piece was planted to potatoes last year, with very little manure. Used one barrel seed. Yield fifty bushels.

The Cusco was planted on three-fourths of an acre of greensward, dry except at one corner. Manured with a compost made of a large quantity of raw muck and a little fish guano, about two quarts in a hill. Used three and a quarter barrels seed. Yield one hundred and seventy-two bushels.

The Gleason was planted on seven-eights of an acre of old land, naturally wet, but worked so deep and thoroughly, both last year and this, that it was rather too dry this year. A very light dressing of manure, cultivated in, and a handful of hen manure and ashes in the hill. Raised potatoes on the piece last year, with very little manure. Used four barrels

seed. Yield one hundred and seventy-eight bushels.

The remaining eighth acre, too stony to work well, was wet, and was planted to Cuscos. Used three-fourths barrel seed. Yield forty bushels.

Early Goodrichs were planted on one-half acre of very wet greensward, with a heavy shovelful of manure in the hill. Used three barrels seed. Yield one hundred and fifty-two bushels.

Then I planted one-fourth of an acre to Gleasons. Land and manure the same as with the Early Goodrich, and seeded about the same. Yield sixty bushels.

Taking into account the different amounts of seed and manure used, and also the fact that in this section dry land did not give as heavy yield this year as wet, I cannot see any difference in the productiveness of these four kinds. All of them are dry and mealy from dry land and not so good from wet land.

The Gleasons are entirely free from rot on both dry and wet. The Early Goodrich affected a very little on land that was very wet indeed. Of the Harrison one-half bushel in the fifty were affected. The Cusco was affected badly on wet, and somewhat on dry land.

A year ago last spring I paid twenty-five dollars for nine bushels of these potatoes which gave me my start, and I am satisfied that my discarding the old varieties has so far been at least two hundred dollars in my pocket. The Calico, one of the Goodrich Seedlings, I threw aside after one year's trial. The Cusco rots too much. The Gleason, Early Goodrich and Harrison are my favorites.

L. E. BICKNELL.

Windsor, Mass., Oct., 15, 1868.

For the New England Farmer.

HOME EMPLOYMENT FOR WOMEN.

We often hear the exclamation from ladies whose household cares keep them at home, "How I wish I could get something to do to earn money." There is plenty to be done in the school, the shop, the factory, the sick room, &c., if one can go where the work is; but it is almost impossible to get work which can be done at home. Some indeed find their housework and family sewing sufficient to employ their time, but there are many who have considerable leisure, which they would gladly spend in something more profitable than "fancy work," if they could. This is proved by the avidity with which work that can be taken home, often laborious and unprofitable though it may be, is sought after.

There is a natural feeling of independence which makes one dislike to receive every dollar of spending money from another, though cheerfully granted; besides it would often be a great help in the family if the wife and daughters could earn their own clothing.

But what can they do? I shall not attempt to settle the entire question, but will leave it to the professional philanthropist, with the assurance that it is worthy of special attention. As regards farmers' wives and daughters, however, I think the exigencies of the case may be met at least half way. There is, or might be, for them healthful, pleasant and profitable home employment Is there not, worthy farmer, some little spot of unimproved land near your house, which you have often thought might be made profitable, if you had but the time to take care of it? Just step into the house and look at the plants growing in the window. What care they receive! Not a dead leaf, not a scraggy branch, but all fresh, thrifty, and beautiful. Notice that elegant shrub, growing from less than a cubic foot of earth,—there is high culture. Now if the same care and culture were applied to that bit of waste land, what might it not produce? The delicate skill which has brought these plants to such a degree of perfection, is just what is required in the successful cultivation of many desirable fruits and vegetables.

Suppose then, that just for the sake of novelty, the ladies try the experiment of "gardening for profit." Let the ground be prepared this fall for the spring cultivation. There will be plenty of time during the winter to decide what it will be advisable to raise, and the best methods of so doing. Do not undertake the care of more land than can be properly managed. The same system and order upon which the skilful housewife so justly prides herself, should be extended to the garden.

I have forgotten how the question which was discussed in one of the Vermont Farmers' Clubs, "Does Slick Farming Pay?" was decided; but I am quite sure that *slack* farming does *not* pay.

Gardening is certainly an honorable employment for every one. A little improvement in public sentiment which shall make it customary for ladies is very desirable.

These suggestions are not for those who live in luxury, and have a retinue of servants to attend them, nor for those who in the midst of a large family are already overburdened with care. They are made rather, that those who have spare time and are not afraid of work, may not overlook the pleasant and remunerative employment that is waiting their attention.

Marlboro', Mass., Oct., 1868. MATTIE.

For the New England Farmer.

DAIRY STOCK---BUTTER-MAKING.

IRASBURG, VT., FARMERS' CLUB, OCT. 18, 1868.

G. B. Brewster said that in a dairy of twenty-five cows two or three, on an average, will fail every year. To supply these, somebody must raise the heifers, and if others can afford to raise cows to sell, cannot dairy farmers

raise them to keep? He had noticed that the cows he purchased did not do as well the first year as they did afterwards. They must have a fight with every cow in the herd to settle the great question of supremacy, or be gored and beaten about by others, so that they cannot feed or rest in yard or pasture in peace. Then we are not sure of getting good cows after spending much time in inquiry and examination, as it is not safe to take any man's recommendation of a cow, or to depend entirely on appearances. He acknowledged that his practice thus far had not corresponded with his theory. After we get fairly started in farming and are really masters of our business, he thought we should raise our own stock. It is sometimes difficult, as we are situated, to raise all the stock necessary to keep a full herd of milking cows, and are compelled to buy to replace those that fail. He thought the true way was to have the best cows come in early, say in February or March, and to raise the most likely heifer calves from these cows. He thought we should generally fatten and sell cows at about twelve years old. We can, it is true, keep them till they are sixteen, but at that age they do not fatten easily, and are apt to prove almost a dead loss.

Of other stock, also, he said we should try to raise what we want. He had raised a few sheep, that have paid as much clear profit as any stock. He keeps them, and also some colts, with the cows. They seem to eat feed that cows refuse. Near his milking yard the grass is very rank and the cows leave it. The colts graze there an hour or two almost every day, but he believed it is an injury to cows to be pastured with colts, as the colts frequently run and chase the cows, which are not specially built for speed. He thought it an injury to use a dog in driving cows, for the same reason.

Most of our stock should be dairy cows. He believed it would be best for this neighborhood to devote our whole attention to dairying, and make a tip-top article; one that we could sell to regular customers in the city where they are willing and able to buy a good article. Butter is a most delicate thing to make, but with proper attention and the necessary facilities any one can make it so that the flavor will be right.

Salt does not *preserve* butter; it flavors it. Fresh butter will keep as well as lard under proper conditions. Milk will become corrupt and decay, consequently the cream must be taken off at the right time. As there are some particles of milk still in the cream, it must be churned before these particles corrupt the whole mass, if we would have clear butter to pack. It must also be made at a low temperature so as to be hard.

He formerly soaked his tubs in water previous to using them, but now only washes them out very quickly with hot water, then wipes dry and sets a dish containing a piece of brimstone, into the tub, drops a good live coal upon the brimstone and puts on the cover, as it is just as necessary to have the cover cleansed as any part.

Water in the tub is very bad. Any one who lets butter stand for days in a pail knows how the wood causes it to taste. It is just so with a butter tub. The water in the wood acquires a very bad taste, which it imparts to the butter. It is better to have moisture go from the butter into the tub than from the wood into the butter. Z. E. Jameson, Sec.

Irasburg, Vt., Oct. 18, 1868.

For the New England Farmer.

EXPERIMENTS IN PLOUGHING.

Having recently ploughed three different fields with a side-hill plough, I send you a brief report of my experiments.

The first experiment was on a piece of five acres, about equally divided into level and side-hill, or slightly side-hill land. The timber from this tract was taken off for wood some twenty years ago, and grass had gradually worked in, forming, with raspberry bushes, &c., a tough sod, which, with old rotten stumps and a few stones, made it necessary to employ a team of one pair of oxen and a span of horses to break it up. As it had never been ploughed or even harrowed, the surface was rough with knolls and hollows.

The piece for my second experiment consisted of several acres of pasture land, both level and slightly side hill. The team required was a pair of average sized oxen and a ten-hundred horse. The surface was not as rough as the first lot.

The third experiment was on a field embracing both meadow and stuble ground, ploughed together for convenience sake. A part of this field was level and a part moderate side hill. The team was the same as in experiment number 2, although a stout pair of oxen or a span of horses might have done the work

The first field mentioned I regarded as a very difficult one even for a common or right hand plough, and required a larger size than that I happened to have, which is No. 6 of the Gov. Holbrook Swivel Plough, which I used on each of the three lots. But notwithstanding its small size and the unfavorable state of the land, the sod was well reversed, and the surface pulverized and left in nearly as good condition as stubble land.

The surface of the second field had been packed quite hard by the feet of the stock in grazing, and in places it was mossy and heavy. Here I raised the sword or cutter, as can be done on these ploughs, so as barely to cut through the sod, and again I had good success in turning the sod and pulverizing the ground turned up.

On the last field I was much pleased with the manner in which the convex mould board

of this plough broke up and fined the furrow, not only of the stubble but also of the meadow portion of this lot—the latter appearing to be about as mellow and porous as the former.

The advantages of a swivel plough for side-hill work are well known and fully appreciated by farmers. For level land it may also be recommended for its avoidance of dead furrows, so much dreaded by the man on the mowing machine, and for its allowing the "nigh" and "off" oxen or horses to alternate in furrow-travelling, which affords the team no inconsiderable relief. GEORGE BACHELDER.

Stanstead, P. Q., Oct. 8, 1868.

CANADA CATTLE.—We notice by an article in the *Prescott Telegraph* that in consequence of the scarcity of forage in many parts of Canada, farmers are obliged to reduce their stock, and that thousands have already crossed the line. The remark is made that it would be hard to conceive what the farmers would have done with their surplus stocks had it not been for the American buyers. We see by the same paper that J. P. Wiser & Co., of Prescott, who fatted 750 head of cattle last year, a large part of which were marketed at Cambridge this spring, are again purchasing largely of the finest steers and oxen for feeding this season. Mention is made of their purchasing a fine pair of oxen weighing 4000 lbs. for $200, a premium pair for $180, and 67 very good steers at $55 each in specie. It appears that they are breeders as well as feeders, and took most of the premiums for fat cattle, and many in other classes at the late show of the South Grenville Agricultural Society.

HOPS IN WISCONSIN.

The danger of running into speciaities in farming is strikingly illustrated by the disastrous experience of hop-growers in Wisconsin the present season. It is said that many farmers went into the business so exclusively that they have not raised grain enough for their own use, and some have been obliged to go into bankruptcy in consequence, and others have mortgaged their farms to meet their obligations. The extent of the infatuation is illustrated by a correspondent of the Wisconsin *Farmer* who says:—

From *one* station alone, (Kilbourn City) were shipped last spring roots enough to plant *twelve thousand acres!* I asked my neighbor, who lives right opposite my house, about two weeks before hop-picking, how he thought his hops would yield, and what he would contract them for. His reply was, that if the most responsible insurance company on earth, were that day to offer to insure him a ton per acre and fifty cents per pound for the whole crop of 5½ acres he wouldn't pay a quarter per cent for the policy. That man picked only about half his yard, and was to-day querying whether he wouldn't have made money to let the whole go unpicked; for he couldn't get a shilling (12½c) a pound for the best of his harvest.

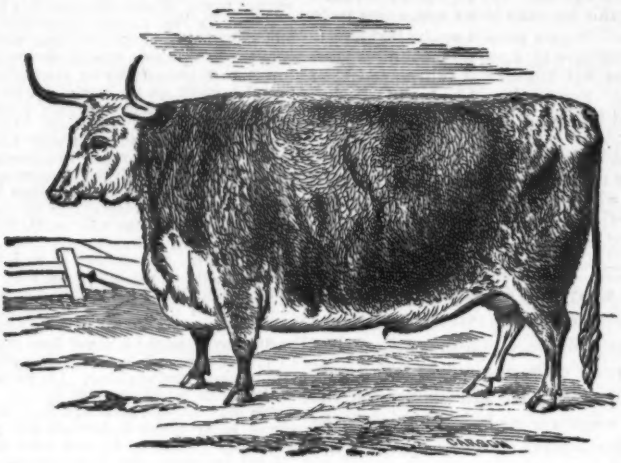
The hop-louse has this year ruined nearly or quite half the hops in the State. I have only seen *two lots* that I would *last year* have graded as "prime." Two buyers and one brewer told me to-day that they had only seen *one* sample of perfect. There are to-day several thousand acres of hops in Sauk county, all testifying in their unpicked, blighted blackness, as they rattle in the autumn wind, that their ruin was wrought even as by a deadly plague, or a simoom all in a few hours. I have wrought in hop fields and seen hops looking fair as I left them at night, ruined next morning, to the extent that I threw away and forbade the picking of scores upon scores of hills. And four to five days was the longest time required for lice to render fair and bright fields black, mouldy, slimy, nasty and stinking. Let no lady object to the unclean language; for twenty thousand or more lady hop-pickers will bear witness that a skunk is as desirable company as a hill of hops with lice a quarter of an inch thick all over it.

I believe some two thousand farmers in Wisconsin will in a year from now be doing just what I saw a very shrewd man and extensive raiser doing to-day—selling hop-poles for firewood.

AN OLD AGRICULTURAL FAIR.—Col. Harris, editor of the *Ohio Farmer*, during a recent visit to the East, was present at the late Fair of the Addison Co., Vt. Agricultural Society. After giving a very favorable account of that exhibition, he indulges in the following reminiscence of a Fair held at the same place in his boyhood:—

Speaking of the Addison County Fair reminds me that well on to five and forty years ago, I attended the first Agricultural Fair ever held in this county, and on this very spot of ground, and my father won a premium on a bull calf—not the undersigned, who has since made some noise in the world, which the aforesaid bull calf never did, except when he was knocked on the head the next year, for an overgrown scallawag. At that fair, as I recall it from my dozenth year or thereabouts, we had gala times. Upon four monster wheels of marble carts from Dr. Judd's marble works, was erected a huge platform upon which were mounted the representatives of the trades and of agriculture; in the centre was a pole with a sheaf of wheat fastened at the top; twenty yokes of oxen dragged this car through the village, while hundreds of people followed it with gaping mouths and admiring eyes, among whom was one "which his name it is" the editor of the *Ohio Farmer*; and here he stands now upon the same spot; but of all the men of that day, how few are here! I cannot name one except Edwin Hammond. Very thoughtfully I turned away and took up my journey.

—The *Germantown Telegraph* says that perennials should be divided and transplanted during the early part of November if not attended to before. This will cause the flowers to be larger in size and of much deeper colors.



THE HEREFORD CATTLE.

The inquiry of our Maine correspondents, on another page, for information as to this breed of cattle, induces us to give at this time the above beautiful illustration of a fatted Hereford ox, with a somewhat extended notice of this ancient race of English cattle. No one can compare the artistic execution of the above picture with those which were used only a few years ago to illustrate farm stock without being struck with the great improvement which has recently been made in the art of engraving. Our readers will perhaps be less interested than ourselves by the statement that the expense of these illustrations keeps pace with their perfection.

The Herefords take their name from that of one of the richest agricultural counties in the western part of England. They are supposed to have originated in a breed of white cattle with red ears, which were great favorites as long ago as A. D. 900. Somewhat later a law was passed which recognized the value of 100 of these cattle as equal to that of 150 dark or black ones. One hundred years ago, says Mr. Allen in his work on American Cattle, from which we copy our illustration, the Herefords were of a deep red color, with mottled faces, &c. They are now, he says, usually red, with shades sometimes running into light, or yellowish red, with white faces, throats, bellies, and sometimes backs, and occasionally a roan of red and white mixed, and more rarely an almost clear white, with red ears, is found among them.

After remarking that he finds less said in English books in relation to the Hereford than of almost any other well known breed, Mr. Allen says:—

Fortunately for the present purpose, we have had several years' close and almost daily observation, in a herd of imported Herefords and their descendents, which were kept near us, as well as of occasional observation of other importations, which have given us a more intimate knowledge of them than volumes of books, without such personal observation, could have done.

Perhaps we cannot convey a better description of the Hereford, after giving accurate portraits of the sexes, than to say: give a Devon a quarter more size, somewhat more proportionate bone and horn, a trifle shorter leg, and longer body, a little coarser in every part, and you have a good Hereford, in all excepting color.

As useful cattle, the Herefords are a good breed. We are aware that their introduction into the United States has not been, in comparison with some other breeds, successful in popularity or extended distribution; but that fact decides nothing as to the positive merits of the stock itself. Partiality, prejudice on the part of our cattle breeders, or pre-occupation of the ground by other breeds which meet the general approbation, may keep them

for a time in the background; but their actual merits once known, they may have a fair trial, and achieve a substantial success.

As a Dairy Cow,

The Hereford has little reputation, either in England or America. We have found no English authority, except a rare instance or two, which gives her much credit as a milker. Possibly this may have arisen from the fact that the Hereford districts are grazing, and not dairy. The milk is rich, but too little of it—not much more than to rear her calf in good condition. She dries early.

If she ever was a milker before her modern improvement began, the milking faculty has been sacrificed for a ready tendency to flesh, which has been obtained in a high degree in her race. We have seen a dozen of them milked through three or four successive seasons, and the yields were such as would be unsatisfactory to a modern dairyman. Now and then a fair milker turned up, but they were in a minority of numbers; taken together they were less than ordinary, for the season. We will not therefore discuss this question further, but pass to another quality as yielding greater pleasure in the relation.

As a Working Ox,

The Hereford is the peer of any other, and superior to most. Large, strong, muscular, well-developed in form, noble, and stately in carriage, he suggests all that need be found in an honest, true worker. At full maturity—say six years old—he girts 7 to 7½ feet behind the shoulders, in ordinary condition, to the Devon's 6 to 6½ feet, and is every way the more powerful, if not quite so quick, or active. A team of two, three, or four yokes of Herefords, under the control of a good driver, for "a long pull, a strong pull, and a pull altogether," is the perfection of bovine strength and majesty. The joints of the ox are well knit, his sinews strong, his shoulders slant well to the yoke, and he carries his load well, be it at the plow, the cart, or the wagon. He is kindly, intelligent, honest in his labor. We have seen them from half, to three-quarters blood, crossed from the common cow, and up to thorough bred, all of great excellence as draught beasts, well matched, and admirable in all their points. The Hereford blood is strong in marking its descent. From the bulls which were kept in our neighborhood eighteen years ago, crossed upon cows which run on the adjacent commons, in their summer pasturage, we now, in their progeny, to later generations, frequently see cows and oxen but a quarter, an eighth, or sixteenth in blood—got by scrub bulls—that show strong Hereford marks in form and color.

We once reared an ox got by a Hereford bull, on a wretched little black cow, which proved to be a fine, stately ox, of a brindle (black and red mixed) color, and a better worker we never knew. At eight years old we fed him off on grass, and a little corn meal only, and he gave us 1200 pounds of beef, hide and tallow. Where hay and pasturage are cheap, and the farmer has a taste for the business, it must be a profitable investment to obtain a thoroughbred Hereford bull, cross him on well selected native *red* cows, and rear and break steers for the markets where good working oxen are in demand. The strong blood of the bull will give uniformity in shape, and color, so that the steers may be easily matched, and if not wanted for the yoke, they are equally valuable, as other cattle, for feeding, and the shambles.

As a beef animal, the Hereford is superior. They feed kindly, are thrifty in growth, mature early—at three and four years old—and prove well on the butchers' block. We are aware that they have not now a general popularity in the great cattle breeding regions of our Western States. Few of them have been introduced there, and those, perhaps, not in the right hands to push them to the best advantage. We could wish for them a fairer trial; but the prejudice against the cows as milkers, and the lack in their *taking* appearance as a highly distinctive race, in comparison with the more popular Short-horns, have kept them back in public demand. Their time has not yet come; and it may be, that in the right hands, and with a more critical observation among our cattle breeders and graziers, they may achieve a reputation as a grazing beast, equal to some now considered their superiors.

In their native counties in England, they still hold a high rank, and at the prize shows in the London markets compete successfully with other improved breeds. With all the deficiencies which the advocates of other breeds allege against them, the Herefords still retain their reputation among their English breeders, who hold on to them with a pertinacity which shows an unabated confidence in their merits and profits as a true grazier's beast. We might show recorded tables of their trials, in England, with Short-horns, and the relative profits of their feeding for market, in which the Herefords gained an advantage on the score of economy; but as the trials were not from birth to slaughter, and the comparative early advantages of each breed were omitted in the account, a repetition of the tables here would not be conclusive.

The Herefords in America.

At what date they were first imported into this country, we have no accurate account; but that some Herefords came out among the early importations, is evident, from the occasional marks of the breed among our native cattle where late importations have not been known. * * * * * *

The largest known importation of Herefords into the United States, was made about the year 1840, upwards of twenty in number, by an Englishman, into the city of New York,

and taken into Jefferson county, of that State. A year or two afterwards the bulk of the herd was removed to the farm of Mr. Erastus Corning, near Albany, N. Y., and some of them went into Vermont, where they were for some years bred, sold, and scattered. * * *

About the year 1852-3, Messrs. Thomas Aston, and John Humphries, two English farmers in Elyria, Ohio, near Lake Erie, imported several fine Herefords. They bred them well, and successfully, as seen in the specimens we have several times met, but with what success in their sales we have no intimate knowledge.

In the years 1860 and '61, Mr. Frederick Wm. Stone, of Guelph, Canada West, made two importations of superior Herefords from the herds of Lord Bateman, in Herefordshire, and the late Lord Berwick, in the adjoining county of Shropshire, England, numbering, together, two bulls, and eleven cows and heifers. These were remarkable for their high breeding, and generally, good points. From them, down to January, 1867, there were bred about sixty, and about half the number have been sold at satisfactory prices, and distributed, mostly into the United States. Some of the cows have proved excellent milkers, and all, together with the crosses of the bulls on common cows, have proved profitable grazing animals. * * * * * *

On the whole, the Herefords have not had a fair trial in the United States, in the hands of veteran cattle breeders, who had the means and opportunity to properly test them by a thorough and persistent course of breeding.

We trust that the herd of Mr. Stone, in its various distributions, may have a fair and thorough trial, satisfied as we are, that the Herefords, as a breed, have positive, and well established merits, in their great thrift, and good flesh producing qualities.—*Allen's American Cattle.*

GARGET OR CAKED BAG.—A Waterville correspondent of the *Maine Farmer* says, bunches on a cow's bag, or caking of the bag, may sometimes be reduced by the following treatment, if taken in the early stage of the disease. Bathe the part affected twice a day with the following, viz.: iodide of potassium, 1½ ounce; glycerine, ½ oz.; soft water, 2 ozs., mixed together. Give a tablespoonful of saltpetre every second day, and one-quarter pound of epsom salts every second day, for a few days—say a week—and continue the salts another week, or longer, if the difficulty does not subside. The saltpetre and salt may be given in a mash of wheat bran.

Another correspondent of the same paper puts two or three spoonsfuls of saltpetre with each quart of salt fed to cows troubled with garget, and regards it as the most convenient method of doctoring, and as effectual as more complicated medicines.

THE REIGN OF AUTUMN.

BY ALICE CARY.

The rust is over the red of the clover,
The green is under the gray,
And down the hollow the steel-winged swallow
Is flying away and away.

Fled are the roses, dead are the roses,
The glow and the glory done,
And down the hollow the steel-winged swallow
Is flying the way o' the sun.

In place of summer a dread new comer
His solemn state renews:
A crimson splendor instead of the tender
Daisy, and the darling dews.

But oh the sweetness, the full completeness,
That under his reign are born!
Russet and yellow in apples mellow,
And wheat and millet and corn.

His frosts so hoary touch with glory
Maple and oak and thorn;
And rising and falling his winds are calling,
Like a hunter through his horn.

No thrifty sower, but just a mower
That comes when the day is done,
With warmth a-beaming and gold a-gleaming,
Like sunset after the sun.

And while fair weather and frosts together
Color the woods so gay,
We must remember that chill December
Has turned his steps this way.

And say, as we gather in the house together,
And pile the logs on the hearth,
Help us to follow the light little swallow,
E'en to the ends of the earth.

GOV. CHAMBERLAIN'S ADDRESS.

At the late Fair of the Maine State Agricultural Society, pleases us so well that we reprint a large portion of it, believing it will be acceptable to our readers generally. We copy from the Portland *Advertiser*:—

Apology for Addressing Farmers.

Cicero tells us of a certain Greek orator who was invited to speak before Hannibal, and thought it befitting the occasion to deliver a lengthy discourse upon military art and the office of a general. At the conclusion the great soldier was asked what he thought of the orator. He replied with more force than eloquence that he had heard many silly old men in his day, but this orator was ahead of them all. What flippancy and presumption, before Hannibal who for so many years had contended for the empire with the Romans—the conquerers of the world,—for this Greek man who had never seen the enemy, never seen the field, never exercised the smallest particle of any public office, to undertake to give precepts on military art!

So it may seem to you, veterans of a hundred fields, presumptuous in me to discourse in your presence of the farmer's calling or the Art of Agriculture; for if I assume to instruct or criticise, you will deny my competency as an expert, and if I seek to encourage you and praise your vocation, you will want to ask,

why, if I think farming such a super-eminent delight, I don't try my hand at it myself.

I have serious thoughts of it, my friends, but the fact is you don't seem to favor it yourselves. A very respectable portion of you, it is true, seem kindly enough disposed towards my devoting the rest of my days to farming; but the majority are still so stubborn, or so jealous lest I should beat them at it, that they won't give me the chance.

The Governor once Worked on a Farm.

But yet do not shut me wholly out from your fellowship; for during just one half the years it has taken to bring me to the age of wisdom, I suppose there was hardly any duty or function of a farmer's boy that I did not have a hand in.

And I mind me of a certain twenty-acre lot, where my father gave scope to my boyish ambition and I went at it single-handed, from what time the axe was laid at the root of those mighty trees, till it smiled in graceful harvest. Yes, I have cleared a field! and there is still something within me that wants to do it again.

Since that, my main work in life has been different, and such little harvests as have been vouchsafed to me, have been reaped from other fields. But it is the truth to say that in no work or achievement, have I felt a purer or a prouder joy than when, in the calm summer twilight I never forgot, I smoothed the brooding earth over that last breadth of grain, and knew how Paul felt when he saw in this the emblem of the great resurrection.

Do you wonder that the last time I went home I walked out there with my little daughter, and sat down and sighed for something I had not?—something that you, kind friends, with all your honors could not give me—the sweet rest, the calm mind, the sound body, the heaven-lifted soul of those dear days of old? These are pleasing memories; nor are there brighter dreams of the future—if it is permitted still to dream—than the peace, the freedom, the breadth of view, all the lulling sounds of field and forest, the breath of the home-returning kine, the smell of the upturned earth, the sight of waving harvests in green and gold. Can you deem me over weak if I long for these again to dispel the lingering visions of the earth upturned by fiercer implements, and the thick-strewn harvests where pitiless Death mowed down your strong and brave!

Thus it is that when I yielded to the wishes of your Executive Committee, the diffidence I felt at speaking on these things before you was overcome by the pride I felt in your honorable record, and my interest in your calling.

Farmers give Character to the State.

Distinguished as the State is for some specialties of business, it cannot be denied that by far the greatest part of our productive industry is within the vocation of Agriculture, and it is a fact of which you may well be proud that our public character as a State in social, moral and political, and even military affairs, takes its type and tone from our agricultural population. It becomes, therefore, a high official duty as well as a personal pleasure, to appreciate the services, encourage the labors and promote the prosperity of those who contribute so largely to the public sustenance and to the public character. It would also be ungenerous and untrue to say there is a lack of interest here in Agriculture; for all this bountiful and magnificent array before us, these fruits and fabrics, these finished implements and curious inventions, these animals so perfect of their kind,—nay, this noble and beautiful assembly of men and women—for these, be it not forgotten, are representatives of the farm; all this I say, will put any doubter to the blush. This interest is also attested by the fact itself that you are holding this fair,—upon the unparalleled success of which I must congratulate your Society—to be followed by others in every county; by all the Boards, Associations, reports, published communications, as well as legislative acts, which show that men feel that there is something in the matter worth attending to.

Effects of Grumbling.

For all this, I think it fair to say that the farmer in this State is not over enthusiastic. All the public performances are jubilant, but the individual farmer is apt to be grumbling. Our season is short; the soil not so rich as elsewhere; the rocks plague him; the midge is after his wheat; the rust his potatoes; the coons his corn; the dogs his sheep; the boys his fruit;—that is, if the drought hasn't got everything before hand. He groans, being burdened. Under such a rallying cry it is no wonder that he doesn't go at his work with much heart. His boys are not likely either to be captivated by that strain. They hear of broad prairies needing neither axe nor grubber, stone-drag nor manure cart to force a living from the soil, of magical cities where a fortune is made in a night, or of distant territories where everything even to the mountains is on "a gold basis," and they strike out for themselves. Those who succeed, come back with smooth hands and fine airs, and with money enough perhaps to buy out their father and all his neighbors. This of course works powerfully on the imagination, and the neighboring young people anxious and ambitious, bid the old homestead adieu, which unfortunately does't mean *a Dieu*—commending them to God—but quite the reverse.

And he who is best disposed—most earnest and patient—finds that he can't succeed without hard work, and that at the best, farming requires a vast deal of prudence and care, and even then its returns are somewhat precarious and comparatively small. He is more dependent on chances of the weather than the sailor, and can't get his crop insured for the season as the other can his ship for the voyage. The worst is that his boys too, energetic

and capable as they are, will be likely to take one of those farewells which don't leave much *welfare* behind them.

Home Market.

After giving some very favorable statistics of the agricultural productions of the State, and of what legislation can and cannot do, Mr. Chamberlin proceeds:—

What we want then is a home market—close home. That more than anything else will render the pursuit of agriculture profitable and popular. Then will follow—reacting and interacting—improvements in culture; higher intelligence; better manners; better arts; and when the true ends are realized, a happier condition for society, and for the good and glory of the State.

Now there are some little matters of political economy that we do not always think of as we should. We talk about richness of soil, and proclaim Thanksgivings for abundant harvests. But it requires something more than both of these to make prosperity. Were it not so you would not have seen the cotton States on the verge of ruin from the superabundant crop of 1861, nor the luxuriant West looking with sorrow at her teeming fields and reduced to the dire extremity of burning her corn for fuel, because if sent to its distant and surfeited market the toll would take it all. Abundant crops tend to lower prices, and in a region purely agricultural the market is always distant and sometimes overstocked, either of which diminishes the profits, and both will sometimes produce financial distress in the midst of agricultural plenty. No such thing could happen where there are varieties of industry. Good seasons will not glut the markets, nor will bad ones cause distress—for prices will rise by a limited supply, and so the farmer will be partly compensated for waste of labor on spoiled fields. If half a crop pays as much as a full one, there is no great loss. Now take Massachusetts; why with her poorer soil and her half million less acres in cultivation than ours, does she so surpass us by millions of dollars in the value of her agricultural products? Because three quarters of her working population are engaged in manufacture of some kind, leaving the farmers who make up the other quarter to feed all the rest, if they will. The great diversity of industries in that State requires a larger consumption than the local production. The home market is greater than the home supply. This makes the home producer master of the situation. It stimulates the farmer to devote himself to those specialties which are the most profitable. He is near and can take his choice of the market. He finds what he can raise best and then makes the most of his ground.

Variety of Industries.

It is this variety of industries which gives the farmer precisely what he requires—a near, sure and diversified market. The certainty, quickness and variety of his sales more than make up for deficiencies of soil and season. Ordinary sagacity and moderate skill will be able to seize upon the advantage, and turn to account all the peculiar circumstances of the situation.

We see the advantage too, of keeping our raw material as near home as possible, to be wrought into fabrics here; to give employment to all industries, to encourage native talent and skill, and to attract a population of diversified employment which is the very best encouragement of Agriculture. It is better to bring the market to your goods than carry your goods to the market.

It comes to this, then, that the farmer who will benefit himself, must take an interest in others. His prosperity lies in a broad and generous recognition of the whole industrial system of society. This is one of the few examples of that paradoxical maxim, "The longest way round is the shortest way home."

Practice and Science.

Along with all this, if not before it, must go Intelligence. I should scarcely be pardoned for intimating in such a presence that we need to grow in knowledge. But I venture to say it. Whether it comes from books, from tradition, or from experience, isn't of so much account. If a man only knows, for example, that to raise grain successfully, he must also raise clover and peas and crops of that kind and keep them on his farm and give them back with their rich freight of nitrogen to feed his grain field, it is no matter whether he learned it from his grandfather or the school mistress, or hit upon it himself. But that is one of the things he ought to know—the very philosopher's stone of Agriculture—the alchemy which turns all base things to gold. So if he understands that by a judicious tillage and skilful application of dressings, he may loosen from the very granite rich elements of food, and draw from the air, and sun, and rain, and snow the choicest fertilizers, I can have patience with him, if he can't express the whole process in the barbarous hieroglyphics of chemistry. But he had better study a Chinese chemistry than not to know these things at all.

It won't do always to pride ourselves too much on experience. This is what sometimes makes a man set in his way, when owing to changed circumstances it is no longer the best way. Unless it is intelligent—that is, unless it is based on the thorough cognizance of the immediate matter in hand and surrounding circumstances which effect it,—a too stiff reliance on experience may possibly mislead. All that experience tells us surely is what has been—we argue from it less surely as to what shall be. And then we want to be certain that we know all the necessary conditions; otherwise our conclusions may be false.

Changes are taking place on our farms which we are not apt to discover, or take into

account. As a general habit I think we are farming on the system of our ancestors and taking the tradition of their experience as our guide. But what was true for them is not true for us. When the lands were new, and rich with all the nutriment that Nature had been providing for ages, it was well and wise to take advantage of it. A change, however, has taken place since, which we ought to understand. But now when the land will no longer do of itself what it used to, instead of understanding it and helping it, we spread our labor over twice the surface and then find fault with the whole and say farming will not pay for the labor.

The Agricultural College,

He thinks, may do something for farmers, but as few can be educated there, he calls attention to the importance of improving the Common Schools. He then alludes to

Societies, Clubs and Papers.

Association too is a great help to farmers—the mutual aid they may render by debates, consultations, and comparisons of experience. The newspaper is a great teacher nowadays—perhaps the great teacher. To be sure the terrible "we" will now and then sit like the Grand invisible Lama, and dogmatize and give his own private whim where you had a right to look for impartial, catholic criticism, or a fair statement of enlightened public sentiment. But we must bear the lesser evil for the sake of the greater good; for the great "we" is a good fellow after all, and knows a vast deal, and will often tell us some wholesome truths though they cut close home. Moreover he gives his best corner to the farmers of late, and where he gives you all the corners, as your *Maine Farmer* does, nothing could be better. From all these means which are now in active and increasing exercise, intelligence must be largely deepened and diffused, and we shall soon have a tolerable science of farming, enough acquaintance with the nature and needs of soils to keep us from wasting our materials and our labor, and practical science enough at any rate to keep us from blasting through granite to find coal, or marrying a widow with a hill full of iron pyrites thinking it is gold. "A little learning" certainly isn't "a dangerous thing," in such cases. By these means too, the farmer will hit upon some system of his own by which he will make his vocation profitable and pleasant. It will depend on circumstances whether you can best cultivate a large farm or a small one; on the locality, the age, the kind of soil, the nature and nearness of the market, or perhaps on some physical disability; whether for instance, you have a bullet through your breast, or a wooden leg, or are an old bachelor. If your land will not pay for keeping up, let a good part of it go to grass, or even to trees again. It isn't the worst thing to have a lot of oak, or beech, or sapling pine, or even white birch and poplar growing. These last will do for spools and bobbins at any rate, and we are going to have a demand for these things pretty soon. I noticed on our marches through the magnificent oaks and chestnuts of Virginia, that in the midst of those immense forests wherever a tree had been cut out, the stump was fenced around with tender care to protect the little shoot springing up to replace the old. I don't call that bad Agriculture.

Sheep Raising and Dogs.

If you can't do one thing you can do another. If your land is impracticable in other respects, try sheep raising. In travelling in our south-east counties a few weeks since, the aspect of the country being rather suggestive of this branch of industry, I asked my friends why they didn't raise more sheep? "We are afraid of the dogs," was the answer. And I have since learned that in the eight counties along our coast, more than two thousand sheep a year are actually killed by dogs, to say nothing of the number injured. There is a dead loss of ten or twelve thousand dollars a year in those counties alone. We can find a way to clear that track. If common sense don't help us out, a little applied chemistry might do. But seriously, the low price of wool just now ought not to discourage sheep raising. If we attend to the mutton qualities as well as to the fleece, the farmer would find this a highly profitable business, and the farm would constantly improve under it. The readiness of the market would enable the farmer to make more money from his mutton and his wool together, than those do who are compelled to sacrifice everything to the fineness of fleece.

Stock Raising.

As to stock raising generally, we seem to be on the right road, excepting that it appears to me unfortunate to be obliged to send so many cattle to foreign markets. We ought to have use for them here—every part of them—setting in motion a score of handicrafts, and feeding at the same time both the factories and the workmen. Horses are our pride. But I suppose you will blame me if I intimate that we should not sacrifice everything to speed. Velocity is gained at the expense of power, and I question whether swiftness is the most urgent need nowadays. It might be the main point with "Young Lochinvar," or stray Congressmen at Bull Run. But strength, hardihood, action, these it seems to me should be counted among the prize qualities that go to make up blood. But I deem it a most fortunate thing that we are taking so great an interest in raising animals of choice blood.

Farmers' Sons and Daughters.

And think it not foreign to my subject, but rather the summary and climax of it all, to say we must aim in everything to keep our

farmers' sons and daughters with us. Nobody that we can bring in, will make good the loss of these. Thank Heaven for the children—that the selfishness and sin of the cities has not yet struck its poison into the country—that Moloch is not God here. Thank Heaven that here there are yet fathers and mothers. The State owes them gratitude and honor. I would rather see a list of the women who had reared ten likely children than of the men who had paid $100 a year taxes; they are greater benefactors. They deserve a pension; but the beauty of it is such persons are never in need of it. If they have borne a cross it is the cross of the Legion of Honor! There are two kinds of laboring—for our own profit, which is selfishness, and for the profit of others, which is happiness. Getting money isn't the chief good; those who think it is, sacrifice comfort or virtue to it, and find out their mistake. Think it no waste of your profits to improve and beautify your farms—to make your homes attractive to sense and heart. We have not enough of the *hereditary* about our home notions. We don't build for the future,—you hear men saying, "It will last as long as I do," and you can't help thinking it wouldn't be a great loss then if it didn't last very long. I suppose they think it is unconstitutional to have a family homestead—since "no hereditary distinction, privilege, honor, or emolument, shall be granted or confirmed" by the State. That is because the State doesn't want to usurp the rights of individuals. *You* can grant hereditary honors and privileges if you will, and bless your memory for it to coming generations.

It is of no use to talk of the dignity of labor. Labor will take care of its own dignity. What we want is the dignity of life, and the graces of the heart; more that is genial and social; a kindlier, brighter, daily living.

And if our farmers' sons forsake us what is left for the daughters? The beneficent laws of nature are interrupted—the beautiful machinery of human society is thrown out of gear and goes jarringly and wrong. She whose aptitudes fit her for the thousand sweet and needful ministries of life—whose nature demands something stouter, and bolder, than she to lean on—finds no field for her chief virtues as a helper, and is thrown back upon herself. If this does not wholly break her spirit, she scorns to be dependent, and enters the lists of labor, to keep herself from being a burden, and to maintain her self-respect.

It is no derogatory thing for those whose circumstances make it necessary to go into factories as operatives. But it does seem to me a pity for a farmer's daughter to go there. I know that good character will tell there too, and the excellent gentlemen who have charge of those institutions recognize the superiority of such service, and do everything to make the place worthy of it. But I do not know why it is not quite as well for a conscientious, earnest girl, if she finds herself not useful at home, to go to a good motherly neighbor, and work with her, learning the duties which pertain to her future station and keeping in that honest, economical and womanly sphere and habit till she becomes a householder herself. Supposing she can earn more otherwise? It does not follow that this is worth most. If this good old practice could be re-established domestic life itself would be happier, and a girl would not think it degrading to serve an honorable apprenticeship because she might be called a servant. With the name changed, we are all servants, and the higher we rise in station, if we rise in character too, the more we are servants. It is vexatious sometimes to be at every body's call, but there is a view of life and duty which makes true service to a fellow-being a thing honorable and great enough to satisfy any right ambition. * * *

The enterprise and power which now goes forth to work such wonders elsewhere may, if applied at home, make this a great and beautiful and happy State. The treasuries of nature opened—the forces careering about as applied to useful ends—all high industries set in motion, and Agriculture, Manufactories and Commerce advancing together in the union; that is strength and the diversity that is prosperity!

Let us stand then in our lot where Providence has cast it, anxious for nothing but to be worthy of our opportunities, and diligent to do our duty, content with a goodly heritage while we seek another and better country—that is, a heavenly.

AGRICULTURAL ITEMS.

—It is remarked that the crop of dead leaves from the trees was never known to be so large as it is this year.

—Apple trees in Florida have the advantage of holding their leaves all winter like an evergreen, but it is a drawback that they bear no fruit.

—A young Ladies' Seminary in Rochester, N. Y., has arranged to have the elements of gardening taught as one of the branches of female education.

—The Iowa Agricultural College opens this month; receives pupils without distinction of sex. While the young men learn farming, the young women learn to cook and keep house.

—When a cow or ox gets choked it is said that immediate relief may be obtained by strapping up a fore leg, and compelling the animal to jump. This will cause the obstruction to fly out.

—Our correspondent at Livermore, Me., says the snow was about two inches deep on a level, Oct. 17th, and that last year there was a snow storm there Sept. 30.

—The Essex *Banner* asserts that small quantities of sunflower seed mixed with the food of a horse will impart a fine gloss to his hair, while it

is also a certain cure for founder, if given immediately after the ailment is discovered. In the latter case, about a pint of seed should be mingled with the oats or chopped feed, when a cure will be effected.

—On account of the cattle disease recently prevalent in this country, a government order has been promulgated in England, prohibiting the landing of hay from the United States.

—During the last few months two dogs in Danby, Vt., have killed seventy or eighty sheep belonging to four different parties. The dog men are being called on for damages.

—The Maine *Farmer* says that the first class at the Industrial College at Orono numbers thirteen, and of this number ten have expressed a determination to become farmers.

—For the purpose of "breaking up" a sitting hen, a boy in Lisbon, Me., set fire to the hen's nest which destroyed not only the nest, but barn, house, out building, farm utensils and all the summer's crop.

—Buckwheat has been found useful in dyeing wool. The dried flowers yield different shades of green, and the succulent stems and blossoms, with the addition of bismuth of tin, produce a beautiful brown.

—The Messrs. Hammond, of Middlebury obtained a verdict of $5000 in the Circuit Court at Rutland, the other day, against the Hartford Live Stock Insurance Company, for insurance on their blooded buck, which died not long since.

—In selecting sheep for fattening, the *Western Rural* says, take those in good condition. They should be over two years, and not to exceed six years old. Have a good shelter well littered, and not more than fifty sheep in a lot.

—The Ohio *Farmer* recommends that the mangers for feeding cattle be divided by board partitions, to prevent the strong and greedy from obtaining more than their share, and to enable farmers to give to those animals that need it an occasional extra feed.

—A process has recently been patented in England by which the bran of flour, after being separated, is ground into an impalpable powder, and then again mixed with the flour. In this way all the nutritious ingredients are preserved, while the fineness of the flour is not affected.

—The Maine *Farmer* is informed by one of its worthy subscribers that, being an early riser himself, he invariably carries a lantern into his hen house in the early morning to allow his hens light in leaving the roost and seeking their nests. A merciful man.

—A sad disaster occurred on the Jackson Fair Grounds, at Maquoketa, Iowa, by two buggies on the race track coming in collision. A young lady named Hattie Barns was badly bruised by being thrown to the ground. The team then ran furiously into a crowd of women and children, killing a young girl named Raymond, and injuring several others.

AUTUMN.

Thou comest, Autumn, heralded by the rain,
With banners, by great gales incessantly fanned,
Brighter than brightest silks of Samacrand,
And stately oxen harnessed to thy wain!
Thou standest, like imperial Charlemagne,
Upon thy bridge of gold; thy royal hand
Outstretched with benedictions o'er the land,
Blessing the farms through all thy vast domain!
Thy shield is the red harvest moon, suspended
So long beneath the heaven's o'erhanging eaves;
Thy steps are by the farmer's prayers attended;
Like flames upon an altar shine the sheaves;
And, following thee, in thy ovation splendid,
Thine almoner, the wind, scatters the golden leaves!

LONGFELLOW.

—Grapes are bought by the California wine-maker and delivered at his press, clean, for seventy cents per one hundred pounds, and it is stated that in one thousand pounds scarcely one pound of unripe or rotted berries has to be cut out from the bunches.

—In Chatsworth, Livingston Co., Illinois, is a beet sugar factory in full operation working up about forty tons of beets daily. They expect soon to work up fifty tons. The percentage of sugar is quite satisfactory and the sugar of good quality. The *Reporter* says the beets are daily growing better. Beets continue to improve by ripening till they have been kept about four months.

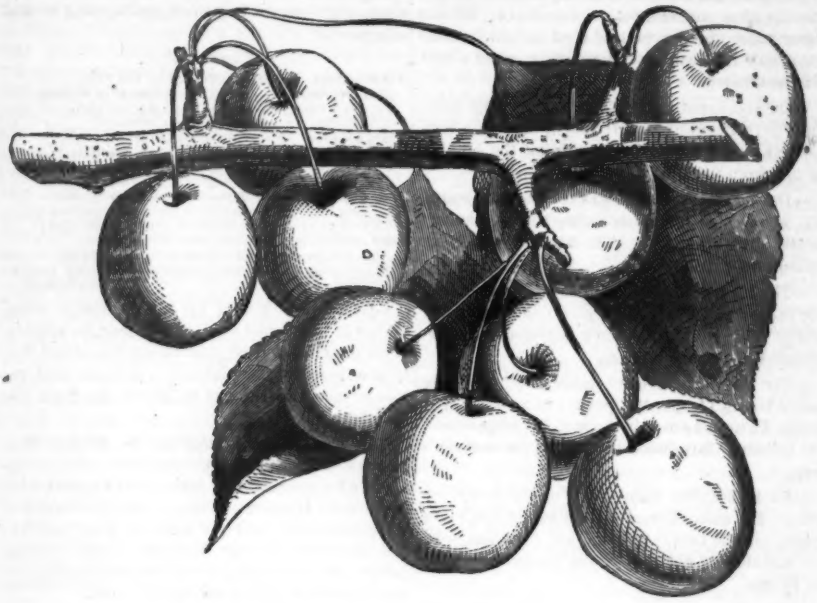
—The annual meeting of the Worcester County, Mass., Agricultural Society was held October 21. The treasurer's report showed that the receipts the past year amounted to $23,941, and the expenses to $21,338, leaving $2603 in the treasury. S. H. Howe, of Bolton, was chosen President and Chas E. Miles, of Worcester, Secretary and Treasurer.

—Geraniums may be kept until spring by being buried in dry land much as potatoes are buried. They should be laid in by the heel in a row, then covered with straw, over which boards should be placed so as to form a ridge, and the whole covered with earth to a depth, according to the climate, sufficient to keep out frost.

FEEDING POULTRY.—Most people who feed poultry at all, in seasons other than winter, feed too liberally in the morning. It is the nature of fowls to roam and gather their food in small bits here and there, and if their crops are stuffed in the morning they droop around and become unhealthy.

Feed sparingly, if at all, in the morning, and let them hunt as it is their nature to do during the day, and if they are unable to gather a sufficient amount of food, furnish them a supply just before they take to the roost.

Variety of food is as essential to the health of chickens as to anything else, and if left to supply themselves they will obtain it. In the winter when they are dependent upon man for subsistence, the demands of their nature should be as fully complied with as possible.—*Ohio Farmer.*



CRAB APPLES.

We have received from B. Bryant of Derby Centre, Vt., specimens of two varieties of Crab Apples—half a dozen each of the Gold Drop, and Queen's Choice. The Queen's Choice is oblong, with a fine red cheek, and a native of Canada, extremely hardy and remarkably prolific, and bears young. The specimens were about 5¼ inches in circumference. The other is also hardy, prolific, and a winter fruit, and measures full six inches round. Both of these apples, Mr. B. informs us, are unequalled for wine making. The fine appearance of these specimens, and of the 105 varieties of Crab Apple exhibited by the Miss Shipmans at the Vermont State Fair at Burlington, suggest the question whether this fruit is not too much neglected. Mr. Cole says that all our apples are from Europe, and that they originated from the wild Crab of that country.

Dr. Warder, in his American Pomologist, says:—

The native country of the apple, though not definitely settled, is generally conceded to be Europe, particularly in southern portions, and perhaps Western Asia: that is, the plant known and designated by botanists as *Pyrus Malus*, for there are other and distinct species in America and Asia which have no claims to having been the source of our favorite orchard fruits. Our own native crab is the *Pyrus coronaria*, which, though showing some slight tendency to variation, has never departed from the strongly marked normal type. The *P. baccata*, or Siberian crab, is so distinctly marked as to be admitted as a species. It has wonderfully improved under culture, and has produced some quite distinct varieties; it has even been hybridized by Mr. Knight, with the cultivated sorts of the common Wilding or Crab of Europe, the *P. Malus*. Pallus, who found it wild near Lake Baikal and in Daouria, says it grows only three or four feet high, with a trunk of as many inches diameter, and yields pear-shaped berries as large as peas.

Our cut was made from a specimen of the Siberian Crab Apple, presented to us by S. P. Fowler, of Danversport, Mass. The tree is vigorous and strong and of rather small size, but very ornamental when in blossom from the profusion of its white flowers. The fruit grows in rich clusters, resembling, in the red variety at a little distance, large and handsome cherries.

—The foliage of trees in England is usually larger and much deeper and darker in color, than in this country.

IN THE GARDEN.

Summer is dying, slowly dying;
She fades with every passing day;
In the garden-alleys she wanders sighing,
And pauses to grieve at the sad decay.

The flowers that came with the spring's first swallow,
When March crept timidly over the hill,
And slept at noon in the sunny hollow,—
The snowdrop, the crocus, the daffodil,

The lily white for an angel to carry,
The violet faint with its spirit-breath,
The passion-flower, and the fleeting, airy
Anemone,—all have been struck by death.

Autumn the leaves is staining and strewing,
And spreading a vail o'er the landscape rare;
The glory and gladness of summer are going,
And a feeling of sadness is in the air.

The purple hibiscus is shrivelled and withered,
And liquid lolls its furry tongue;
The burning pomegranates are ripe to be gathered;
The grilli their last farewell have sung;

The fading oleander is showing
Its last rose-clusters over the wall,
And the tubes of the trumpet-flower are strewing
The gravel-walks as they loosen and fall;

The crocketed spire of the hollyhock towers
For the sighing breeze to rock and swing;
On its top is the last of its bell-like flowers,
For the wondering bee its knell to ring.

In their earthen vases the lemons yellow,
The sun-drunk grapes grow lucent and thin,
The pears on the sunny espalier mellow,
And the last fat figs swell in their purple skin;

The petals have dropped from the spicy carnation;
But the heartless dahlia, formal and proud,
Like a worldly lady of lofty station,
Loveless stares at the humble crowd.

And the sunflower, too, looks boldly around her;
While the belladonna, so wickedly fair,
Shorn of the purple flowers that crowned her,
Is telling her Borgian beads in despair.

See! by the fountain that softly bubbles,
Spilling its rain in the lichened vase,
Summer pauses!—her tender troubles
Shadowing over her pensive face.

The lizard stops on its brim to listen,
The butterfly wavers dreamily near,
And the dragon-flies in their green mail glisten
And watch her, as passing she drops a tear,—

Not as she stood in her August perfection!
Not as she looked in the freshness of June!
But gazing around with a tender dejection,
And a weary face like the morning moon.

The breeze through the leafy garden quivers,
Dying away with a sigh and a moan:
A shade o'er the darkening fountain shivers,
And summer, ghost-like, hath vanished and gone.

"THE HARVEST OF THE SEA."

It is surprising, with all the attention that has been given to the cultivation of grain crops, fruit crops and root crops, and other products of agriculture and horticulture, and with the vast amount of interest that has always been shown in the improvement of breeds of cattle and promoting their increase and productiveness, that so little general attention has been given to the cultivation of that great source of food which more than a hundred years ago was aptly called "The Harvest of the Sea." There is no more delicious article of food placed on our tables than that formerly furnished in such abundance by the great rivers and swift running interior streams with which this country fortunately abounds. Why, then, fish should not be cultivated, and their productiveness be increased, instead of allowing them to decrease, and many fine varieties of them get into danger of dying out altogether, is a matter of surprise. It may be that they have been regarded as in the nature of other wild animals, which could not be subjected to the care and control of man; but this is a short-sighted view of the subject, as it has been demonstrated for many years that such advantage can be taken of the instincts and habits of migratory fishes as to keep streams and ponds well stocked with them, and to furnish abundant supplies for all neighboring markets. Within a few years past this idea has been extensively acted upon in Europe, and to some extent in the Eastern States of this country. Fish culture has taken its place among the most useful and valuable pursuits, and fish spawn has become an important article of commerce. In France, Scotland, Ireland and other European countries, rivers and streams that furnished an abundant supply of the finest fish in former generations, and that had become nearly if not quite barren, have been restocked, and now furnish as ample a yield as in their best days. The same process is going on in the New England States with the trout and salmon fisheries, and spawn of the shad have even been transported across the country to a tributary of the Alabama, and that noble river and some of its branches have thus been stocked with that favorite fish. One fish culturist in this country is sending fresh eggs by the million throughout the Northern and Middle States. This grower hatched out last summer the enormous number of forty millions of young shad, and turned them into the Connecticut river.

It appears from the experience of those engaged in the work that it is among the easiest and most certain things to keep any stream well supplied with the variety of fish to which it is adapted. It is among the most prolific of animals. A ten pound salmon yields ten thousand eggs, a good sized herring will spawn forty or fifty thousand, a shad yields a hundred thousand, while a good sized codfish spawns a million. If this prolific yield of spawn all reached mature age the rivers and seas even would be alive with fish. But the eggs are subject to dangers and risks of destruction almost as numerous as the proportions of their increase in numbers. Those deposited in fresh water rivers are gobbled up by mature fish, by fresh water fowls and other depredating animals; they are washed ashore, high and dry, by floods, and they are covered up by the refuse from saw-mills, tanneries, &c. When that part of the spawn that escapes all such dangers is hatched, the young fish, in

turn become the prey of other fish, and millions on millions are destroyed in that way. Scarcely more than one in a hundred fish eggs escape all these perils long enough to reach maturity. With the stock that is taken care of by the fish culturist it is different. When, at the proper season, he has procured his spawn, he has his troughs, his ponds, and his sheltered streams, which guard his young crop from nearly all their perils. When he puts a thousand eggs of the salmon or the trout into his hatching troughs, he is pretty sure to get eight hundred young fish from them. This gives the artificial culture a great advantage over the natural supply. As there is scarcely a month in the year in which the fish of some genus is not spawning, there is a constant opportunity for engaging in the work. The French Government is making every effort to extend the culture as a branch of national industry. In that country, the artificial fish ponds of Doombes extend over thirty acres. All kinds of streams and waters are stocked from them with fish suitable to their peculiarities; and this is done under supervision of experts appointed by the Government. Spawn and young fish, of carp, perch, eels and pike, are sent to lakes, ponds and sluggish streams, trout to the cool and bounding brooks, and salmon to the clear, swift-running rivers. There it is a great and wonderfully successful enterprise, and it seems destined to become so here. There is no difficulty in securing spawn, and none in getting the proper instruction for treating it, or for any branch of the culture. Mr. Thaddeus Norris, one of the most successful fish culturists in this country, has just issued a complete treatise on the subject, in which he imparts the teachings of his experience.—*Philadelphia Ledger.*

FEEDING SHEEP FOR MANURE.—One of our nurserymen sent a man to Michigan to buy sheep to fatten this winter. He bought 400 good wethers, three and four year-olds, that average about 95 lbs. each, at a cost here of $3.10. His object is, to make manure. He gets about a load of manure to a sheep, worth $4.00 or $5.00. He has adopted this plan three or four years, and his land already shows the effect. He thinks it far better manure than that which he draws from the city. I told him if he would use oil-cake instead of corn the manure would be richer still. There will be a great many damaged beans this year, which, if not mouldy, can be fed to sheep with advantage. And the manure from beans or peas is nearly as rich as that from oil-cake. —*J. Harris, in Agriculturist.*

—The Longworth Cincinnati prize for the best wine grapes, for the whole country, was given to Ives's Seedling and the Concord; for the best table grape to the Concord.

Ladies' Department.

From the New York Ledger.

TO THE AUTUMN FLOWERS.

BY ALICE CARY.

Tread lightly, little bird, tread lightlier yet—
Mist-like across the grass, ye ivies creep,
And in your time, O violets, softly set
Your blossoms on their stems, and softly weep
The rainy tears ye cannot all repress—
She walks among ye yet, though shadowless.

And by her death, and lovely living days,
And by her slumber in among ye now,
I charge ye that ye imitate her ways;
Unto the will of heaven submissive bow,
And give your charities of sweetness forth,
To bless some little sunless place of earth.

She loved ye well, and all her morns and eves
For your sweet company her house forsook;
The lowest whisper of the trembling leaves,
The wildest prattle of the woodland brook
She could interpret by that sense divine,
That understands whatever things are fine.

Often the rose would keep her summer state
Despite the frost that did her cruel wrong,
And like a sister at the valley gate
Wait to salute her as she passed along:
Often the meadow clover lightly bent
Her slender neck to see the way she went.

But she has left ye now, ye wildlings sweet,
For sweeter company than ye could be:
The quiet music of her quiet feet
Has dropt to silence, and her family
Of flowery folk must gather round her place
Of sleep, and turn their faces to her face.

HOUSEHOLD ECONOMY.

CONTRIBUTED FOR THE NEW ENGLAND FARMER.

Rye Breakfast Cakes.

Two cups of buttermilk; a teaspoonful of soda; a little salt, and one well beaten egg. Mix to a thick batter with rye flour and corn meal, in the proportion of one part corn meal and three parts rye flour. Beat well and bake in cups or roll pans. The corn meal makes them tender.

Milk Toast.

Toast stale bread to a nice brown, and spread with butter; lay it in a deep dish and pour over it enough boiling milk to cover it. If necessary put a little salt in the milk. Milk is boiled or scalded best by placing it in a tin vessel over boiling water.

Fish Hash.

Soak nice white cod-fish in luke-warm water about half an hour; pick it free from bones and add boiled potatoes in the proportion of a quart of potatoes to a pound of fish; chop it fine and put the mixture in a pan over the fire, with a cup of milk and a small piece of butter. Beat it, while heating, five minutes.

Softening Cotton Cloth.

We have a way of shrinking and softening cotton and linen cloths to prepare them for sewing, which I find is not generally known. As it is much less trouble than the method in ordinary use, it will, undoubtedly, be welcome to such of your lady readers as are in favor of labor-saving. Lay the cloth in smooth folds—as it comes from the shops—in a tub, and cover it entirely with boiling water. (The suds in which washed clothes have been boiled are nice for this purpose.) Cover the tub closely and let it stand till cold. Then drain off the water sufficiently to allow the cloth to be hung up to dry without wringing. Pin the first end to the clothes line firmly, by the selvedge, carry it along the line, pinning it securely at short intervals till it is all hung up smoothly. When dry, fold it carefully as you take it off and it will be smooth enough to cut without ironing.

Book Shelves.

Very pretty book shelves to hang upon a wall may be made of any light soft wood by covering strips of graduated lengths with bright fine flannel to match in color the carpet or furniture. Thin boards seven inches wide, cut in lengths of twenty-seven inches for the lowest shelf, twenty two inches for the second and seventeen inches for the top shelf, with two holes in each end large enough to receive a picture cord will be sufficient. Nail the flannel on the side and ends with brass headed nails. Have cords of the same color, long enough to hang the shelves from the top of the wall at a convenient distance for use. Tie knots in the cords for each shelf to rest upon. The four cords may be joined above the top shelf and only two be carried up to the ceiling. MARY.

Parsonsfield, Me., Oct. 8, 1868.

MR. EDITOR:—Having never seen a receipt in the FARMER for making sweet pickle, I thought I would send the one I have, as I think it an excellent one.

Sweet Pickle.

Three quarts of cider vinegar; three lbs. of brown sugar; three ounces of cinnamon; three ounces of whole cloves, to seven lbs. of fruit. The fruit should be boiled until tender. Seed cucumbers are used by some, while others use the rind of watermelons or other melons. Apples, peaches and pears are used also.

Cooking Salt Pork.

Perhaps some of your lady readers would like my way of cooking salt pork. Our family are all very fond of it.

Cut the slices small and thin; fry them brown; then have ready a batter made of two eggs, milk and flour, the quantity you desire; cover the pork with this batter, and fry brown again, turning the pieces to brown each side. This is an easy dinner to prepare, when the meat man disappoints you by not making his appearance, and you are making calculations for him to bring the dinner.

Bleeding at the Nose.

I have also, an excellent remedy for bleeding at the nose, which I have never known to fail in our family. I have never seen it in the FARMER, and think every one ought to know so simple a remedy. Take a piece of brown paper, fold it several times until it is the size of a small penny, then wet it in cold water and apply it to the little string under the *upper* lip, holding it there until the blood ceases to flow, which will be almost immediately.

I have a little girl who is frightened almost to death when she has the nose bleed, which is quite frequently, and she always says, "Oh, mother, do put some paper on my mouth quick." for she well knows the result.

I fear I have written too much for this time, but it is two years, I think, since I have taken my pen to address you. Respectfully yours,

Millville, Oct. 12, 1868. JENNIE.

Julia's Apple Pudding.

Pare and slice six good sized apples; add two spoonfuls of Indian meal; three spoonfuls of sugar; one tea spoonful of cinnamon; the same of salt; then add some crumbs of nice wheat bread or crackers; stir these all together, and pour on one quart of boiling milk. Now add one quart of cold milk and two spoonfuls of flour. Bake one hour in a quick oven. E. C. M.

Corinth, Vt., Sept. 28, 1868.

REMARKS.—Our contributors to this department are always welcome, and frequently give us some very valuable hints and receipts. We hope "Jennie" will not allow so long a time to elapse before writing again. "A young housekeeper" desires us to say to some of the ladies who have received first premiums for

their bread, that their receipts for making it would be very acceptable to many of the readers of the Farmer. Also, receipts for nice tea biscuit, and particularly a nice "short cake." We anticipate some satisfactory replies, and will publish them as soon as received. Ed.

BONNETS---LATEST PARIS FASHIONS.

It is very difficult to give any idea of the new bonnets by mere description; they require to be seen for any one to understand what they resemble. Imagine a *toque* of the time of Marie Antoinette. In one her portraits (I allude to that which Mme. Lebrun painted of her,) the Queen of France wears a cerise velvet toque ornamented at the side with a white aigrette. Well, the new bonnets are more like that head-dress than anything I can recall; they are a trifle lower, and they have narrow strings, either of velvet or thick ribbed silk. They form charming head-dresses; it is impossible to imagine anything more coquettish or more graceful, or more in harmony with the actual fashion—a fashion of paniers and other furbelows which prevailed during Louis XVI.'s reign. Mme. Didsbury and about half a dozen leading milliners of Paris have decreed that toques are to be worn this winter; so they are making them in all colors, and selling them as fast as they are brought into their show rooms. For dressy occasions they match in color the dress with which they are worn, but for ordinary walking wear they are black.

At the present moment the "Marly" is the fashionable head-covering of those fair Parisians who have returned to their dearly loved city. I will describe it: A toque, composed of black velvet and black lace; at the back two lace lappets form a hood, and in the centre of the front there are curled feathers, one placed almost upright and straight in a nest of black feathers; a humming bird with a green throat at the side of the nest. Black velvet strings, cut from the piece and edged with lace. The "Dorine" is likewise worn. It is made of lapislazuli blue velvet, the darkest shade you can find, *bouillonne* round the edges, and *ruche* with lace; an aigrette of bird of paradise feathers at the side. Narrow blue velvet strings lined with shot yellow silk. The "Dauphine" is another head covering, for the present moment, and is neither bonnet nor hat. It is made of Celadon green terry, and the velvet is arranged to form a double bow at the top of the head. A ruche of white blonde round the edge, and at the side a bow of blonde, from whence escapes a large light green ribbed ribbon. Toques are not worn lowered over the forehead, like hats; they are placed quite straight, like bonnets.

TROUBLESOME CHILDREN.

When you get tired of their noise, just think what the change would be should it come to a total silence. Nature makes a provision for strengthening the children's lungs by exercise. Babies cannot laugh so as to get much exercise in this way, but we never heard of one that could not cry. Crying, shouting, screaming are nature's exercise, and if you do not wish for it in the parlor, pray have a place devoted to it, and do not debar the girls from it, with the notion that it is improper for *them* to laugh, jump, cry, scream and run races in the open air. After a while one gets used to this juvenile music, and can even write and think more consecutively with it than without it, provided it does not run into objuratory forms. We remember a boy that used to go to school past our study window, and he generally made a continuous stream of roar off to the schoolhouse and back again. We supposed at first he had been nearly murdered by some one, and had wasted considerable compassion on the wrongs of infant innocence; but, on inquiring into the case, found him in perfectly good condition. The truth was that the poor little fellow had no mirthfulness in his composition, therefore couldn't laugh and shout, and so nature, in her wise compensations, had given him more largely the faculty of roaring. He seemed to thrive upon it, and we believe is still doing well. Laughing and hallooing, however, are to be preferred, unless a child shows a decided incapacity for those exercises.

Our eye alights, just now, upon the following touching little scrap, written by an English laborer, whose child had been killed by falling of a beam:

"Sweet laughing child! the cottage door
Stands free and open now;
But, oh! its sunshine glids no more
The gladness of thy brow!
The merry step hath passed away,
Thy laughing sport is hushed for aye.

Thy mother by the fireside sits
And listens for thy call;
And slowly—slowly as she knits,
Her quiet tears down fall;
Her *little hindering thing* is gone,
And undisturbed she may work on."